Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

OCCASIONAL PAPER NO. 111 NOVEMBER 1947

1.9
F76240

TABLES FOR ESTIMATING CUBIC-FOOT VOLUME OF TIMBER

By
Clement Mesavage

SOUTHERN FOREST EXPERIMENT STATION
Chas. A. Connaughton, Director
New Orleans, La.

CONTENTS

	Page
Purpose.	1
Table construction	2
Use of tables in timber estimating . . .	5
Table corrections	11
Table 1. Taper in top 8 feet of first 16-foot log--southern pine.	12
Volume tables for form classes 65-90 . . .	14
Table 28. Area of circles in square feet (basal area table).	66
Appendix: Converting cubic volume inside bark to rough cords.	68
Table 29. Gross volume (cubic feet, inside bark) in merchantable tops of sawlog-size southern pine	71

TABLES FOR ESTIMATING CUBIC-FOOT VOLUME OF TIMBER

By Clement Mesavage
Southern Forest Experiment Station

Purpose

The volume tables presented here have been compiled for use in estimating the cubic-foot contents of standing timber.[1] Although the tables were prepared primarily for eastern hardwoods and southern softwoods, they can be adapted to other species. The lower parts of the form class tables show not only volume in the sawlog portion of sawlog-size trees but also the scaling diameter of the top sawlog. The latter information is needed in obtaining estimates of volume in tops of conifers by use of Table 29 (attached to inside back cover). The top sections of the form class tables show volume in undersawlog-size trees of southern pines. All volumes are inside bark.

When these tables are used in conjunction with board-foot tables which have previously been published,[2] separate estimates of cubic- and

---

1/ Because it has not been possible to get a wide check on the volumes shown for undersawlog-size trees and tops of sawlog-size conifers, these are subject to any changes which experience with the tables may indicate.

2/ Mesavage, Clement, and Girard, James W. Tables for estimating board-foot volume of timber. U. S. Forest Service. 94 pp. 1946.

board-foot volume for sawlog-size trees may be secured from the same cruise tally. Because both sets of tables were compiled from the same base, the volumes obtained are comparable. The two sets of tables also make it feasible to avoid overlapping of volumes when separate estimates are being obtained for board-foot volume in the sawlog portion and pulpwood volume in the tops.

Table Construction

Volume in the sawlog portion of trees

The lower sections of the form class tables show volume in the sawlog portion of trees as determined by tree diameter (o.b.) at breast height ($4\frac{1}{2}$ feet above the ground), number of 16-foot logs, and Girard form class. Butt-log volume for each tree was computed from Huber's formula, $A_{\frac{1}{2}}$ L, where $A_{\frac{1}{2}}$ is the cross-sectional area, in square feet, inside bark at the middle of the butt log, and L is 16 feet, the length of the log. The middle diameter (i.b.) was derived in two steps:

(a) Diameter inside bark at the top of the first log was obtained by multiplying tree d.b.h. by the form class.

(b) To this figure was added an estimate of taper in the top 8 feet of the log. This taper varies with tree size. It also varies with the shape of the first log, which, for this purpose, is reflected by the form class. Table 1 shows the taper estimates used. They are based on measurements of southern pine butt logs.

Volume in the upper logs was computed from Smalian's formula $\frac{a + b}{2} L$, when a and b are cross-

sectional areas, in square feet, of the end diameters (i.b.) of each log, and L is 16 feet. The end diameters were obtained by subtracting, from the top diameter of the first log, estimates of taper in the upper logs. These tapers are shown in Table 2 of "Tables for estimating board-foot volume of timber." Volume for half-logs and for trees with odd-inch diameters was obtained by interpolation. Table 28 (pp. 66-67), showing cross-sectional areas of circles in square feet, has been included as a convenience.

Volume in the tops of sawlog-size southern pines

Cordwood volume above the sawlog portion of sawlog-size southern pines (Table 29) is based on length of merchantable cordwood top, form index of this top, and on the scaling diameter of the top sawlog. Length of top and top form index are estimated in the woods. The scaling diameter of the top sawlog is shown in the lower sections of the form class tables, along with the volume in the sawlog portion of sawlog-size trees. These scaling diameters were derived from the tapers shown in Table 2 of "Tables for estimating board-foot volume of timber." Volume in the tops was computed from Huber's formula. L is the length of merchantable cordwood top to a minimum diameter of 3 inches, inside bark. $A_{\frac{1}{2}}$ is computed for the middle diameter (i.b.) of the top. This diameter was derived from its relation to the scaling diameter of the last sawlog. In tops having a high form index, it is assumed that the middle d.i.b. averages 85 percent of the top sawlog scaling diameter, ranging from 80 percent to 90 percent; in tops with a medium form index, 75 percent, ranging from 70 to 79 percent; in tops with a low form index, 67 percent, ranging from 60 to 69 percent.

Volume in undersawlog-size trees

Volumes for undersawlog-size trees of each form class are shown in the upper sections of the form class tables. These volumes are based on tree d.o.b., merchantable length of cordwood stem (to a minimum top of 3 inches, i.b.), and form class.

The volumes were computed in two steps:

(a) Volume in the first 16 feet is from Huber's formula. The middle diameter (i.b.) was derived as for butt logs of sawlog-size trees.

(b) Volume in the merchantable stem above 16 feet is also from Huber's formula. The middle d.i.b. of this portion was derived from its relationship to d.i.b. at 16 feet. The percentage relationships on which these tables are based are:

Tree diameter o.b. (Inches)	Relationship between mid d.i.b. above 16 feet and d.i.b. at 16 feet (Percent)
6	90
8	85
10	80

Use of the Tables in Timber Estimating

General sampling procedures

These tables may be used in the same way as more conventional tables based only on diameter and height. Their recognition of tree form, however, results in two advantages which both simplify timber cruising and reduce its cost.

First, they may be applied directly, or adapted, to any species regardless of locality, thus saving the cost of constructing local volume tables. Secondly, they allow the use of sampling methods by which estimates, to any stipulated sampling accuracy, may be obtained at lowest cost.

Timber cruising usually involves a problem in sampling with the object of getting an acceptable estimate without spending the time and money which would be needed for complete measurement. The degree of accuracy needed depends greatly on the object of the survey; for purposes of illustration, it will be assumed that the needed standard error of estimate is $2\frac{1}{2}$ percent. By definition, such an error means there is one chance in three that, due to sampling errors, the estimate will differ from the actual by more than $2\frac{1}{2}$ percent, and about one chance in twenty that it will differ by more than 5 percent. This sampling error should not be confused with other types of errors, such as errors in measurements or calculations. Moreover, it will have no meaning unless the data are collected in a manner which will satisfy the requirements of sampling.

A number of arrangements can be designed for the collection of sample data. In timber cruising, however, variations of volume on an area are due to variations in tree number and

tree size. Because the cost of controlling these variations is not uniform, there is usually only one arrangement of data for any one set of circumstances which will yield an estimate to a stipulated sampling accuracy at a minimum cost. Recommendations for several general situations are as follows:

Cruises of small areas.--In cruises of areas smaller than 50 acres, a small sampling error can be secured at lowest cost by getting a 100 percent tree count by 2-inch diameter classes and obtaining an estimate of average volume per tree in each diameter class by sampling. This sampling consists of measuring the diameter, length, and form class of every "nth" tree tallied. The accuracy of the estimate will depend on the number of trees which are included in the sample. For a 2½ percent standard error, about 150 trees (all diameters combined) will suffice.

When detailed information on species and diameter classes is not needed, a complete tree count is cheapest for areas up to 500 acres if the trees are counted in broad diameter classes on a multiple hand tally register.3/ In this system4/ one man marks a line; two others walk parallel to this line about one chain apart and count all the trees on the strips which separate them, classifying the trees ocularly into broad diameter groups. An estimate of average volume per tree in each of these diameter groups is based

---

3/ Rulison, D. E. A useful multiple tally register holder. Jour. Forestry 38(8):659-660. August 1940.

4/ Lockard, C. R. A rapid forestry control system. Northeastern Forest Experiment Station. 26 pp. 1942. [Mimeographed.]

on a sample, measurements of diameter, height, and form class being obtained on every "nth" tree. When 6-inch diameter groups are used, a 2½ percent standard error will be obtained by sampling about 300 trees, all diameters combined.

When the permissible sampling error is large, a complete tree count is usually unnecessary. A sample of tree number will suffice.

Cruises of large areas.--For large areas, only the volume on sample plots is measured. A complete tree count is unnecessary. A few points about sample plots will clarify the use of these tables.

In sample plot cruising, relative cost of necessary operations must be kept in mind. On small areas, travel distance between samples is not time consuming and emphasis can be placed on obtaining a good sample of tree number. Estimates of height and form class may then be based on a fewer number of trees. For example, if the tree count is taken by diameter classes on a ¼-acre sample plot, height and form class may be taken of trees on a smaller plot, perhaps 1/40 acre in size. When travel distance between sample plots becomes great, however, it will be sampling economy to spend enough time on each sample to obtain careful measurements. Tree diameters should then be measured to the nearest inch, and the height of each tree should be carefully classified to the nearest half log. Form class of individual trees may also be recorded; when cruisers are not familiar with ocular form class estimating, an average form class may be based on measurements of at least 50 well-distributed

sample trees. These measurements may be secured by climbing or with the aid of a pole caliper.5/

Volume estimates for undersawlog-size trees may be obtained on a smaller-size sample plot than is needed for the larger trees, because there is ordinarily less variability in the stem count. On the Southern Forest Survey, the plot size for small trees is one-tenth as large as that used for the larger trees. Both plots, however, have the same center. There is similar opportunity to use such double sampling for obtaining data related to tree volume, such as cull allowance, tree or log grade distribution, and stem volume in the tops of sawlog-size trees. On the Southern Forest Survey, such data are based on sample plots which are one-twentieth as large as the plots used for estimates of gross volume.

Tree measurements needed

Form class.--Form class is the percentage ratio between the diameter, inside bark, at the top of the first log and the diameter, outside bark, at breast height. For example, a tree with a first log scaling diameter of 16.0 inches and a breast high diameter of 20.0 inches has a form class of (16.0 ÷ 20.0 x 100) 80 percent.

Relating form class to d.b.h. in swell-butted species such as cypress and tupelo, will result in a very low form class and cause the tables to underscale. To avoid this, tree diameter should be measured high enough on the tree to raise the form

5/ Ferree, Miles J. The pole caliper. Jour. Forestry 44(8):594-595. August 1946.

class to at least 65 percent. Variations in form class, however, will be reduced if diameter is taken well above the pronounced swell.

When form class is estimated ocularly, cruisers should endeavor to classify it to the nearest 1 or 2 percent. In trees smaller than 10 inches, however, small changes in taper are hard to see; the following groups will suffice:

Form class group	Average form class
65-69	67
70-74	72
75-79	77
80-84	82
85-90	87

Length of sawlog portion.--Length of sawlog portion should be estimated in terms of 16-foot logs (plus trim allowance) to the nearest one-half log. The sawlog portion includes the stem from stump height to a point beyond which merchantability for saw timber is limited by cull or excessive taper. Evidences of excessive taper in the top log are: (1) log is above a fork;6/ (2) log has one limb with a base diameter equal to or exceeding one-half the diameter of the log; (3) log has several smaller limbs which collectively influence taper to the same extent as a single limb of the size specified in (2). To prevent an overestimate, top sawlogs which show such evidences

---

6/ Estimates of volume in merchantable sawlogs or cordwood above a fork may be obtained by treating the section as an individual tree.

of excessive taper should not be included in the estimate of usable length even when they are merchantable.

In conifers, particularly the northern species, and in small hardwoods of species like ash, basswood, and poplar, top logs are frequently utilized to a small diameter because they are smooth and sound. Including these small top logs will also cause the tables to overscale. In trees with a d.b.h. of 10 inches, the sawlog portion should not include the stem above a point with a minimum diameter of less than 60 percent of d.b.h. This percentage relationship reduces progressively as tree diameter increases; for 40-inch trees, the top sawlog should be at least 40 percent of tree d.b.h. Normally, however, top logs in trees 16 inches and larger will be excluded because of excessive taper or cull before this minimum diameter is reached.

Cordwood length.--In undersawlog-size trees, cordwood length, in multiples of 4 feet, includes the stem above stump to the limit of cordwood merchantability, but not smaller than 3 inches, inside bark.

Length of tops in sawlog-size conifers.--In sawlog-size conifers, top length, also in multiples of 4 feet, includes the stem above the sawlog portion to the limit of cordwood merchantability, but not smaller than 3 inches, inside bark.

Top form index.--The top form index is the percentage ratio between the diameter inside bark at the mid-point of the usable top and the scaling diameter of the top sawlog. There is no practical way to measure it. It can only be classed ocularly

as high, medium, or low, the percentage ratios being 85, 75, and 67, respectively.

Table Corrections

When it seems likely that the average tapers assumed in these tables will result in excessive error, the volume in felled trees should be measured for comparison with the corresponding volumes in the tables. The comparison should preferably be summarized for each length class; measurement of about 50 trees of assorted diameters in each length class should be sufficient. The tables may thereafter be applied directly by adjusting tree form class; an average increase or decrease of 2 percent in cubic volume results from a change of 1 percent in form class.

Note: The Appendix contains instructions for converting cubic volume inside bark, as obtained from these tables, to cubic volume outside bark and to rough cords.

Table 1.—Taper in Top 8' of First 16' Log - Southern Pine

D.B.H.	Form Class					
	65	66	67	68	69	70
Inches	Taper in Inches					
6	.5	.5	.5	.4	.4	.4
8	.6	.5	.5	.5	.5	.5
10	.7	.7	.6	.6	.6	.6
12	.8	.8	.8	.7	.7	.7
14	.9	.9	.9	.8	.8	.8
16	1.1	1.0	1.0	1.0	.9	.9
18	1.3	1.2	1.2	1.2	1.1	1.1
20	1.5	1.5	1.4	1.4	1.3	1.3
22	1.8	1.7	1.7	1.6	1.5	1.5
24	2.1	2.0	2.0	1.9	1.8	1.8
26	2.5	2.4	2.4	2.3	2.2	2.1
28	3.0	2.9	2.8	2.7	2.6	2.5
30	3.5	3.4	3.3	3.2	3.0	2.9
32	4.2	4.0	3.9	3.7	3.5	3.4
34	4.9	4.6	4.5	4.2	4.1	3.9
36	5.5	5.2	5.0	4.8	4.6	4.3
38	6.0	5.7	5.5	5.2	5.0	4.7
40	6.4	6.0	5.8	5.5	5.3	5.0

D.B.H.	Form Class					
	78	79	80	81	82	83
Inches	Taper in Inches					
6	.4	.4	.4	.4	.3	.3
8	.4	.4	.4	.4	.4	.4
10	.5	.5	.5	.5	.5	.4
12	.6	.6	.5	.5	.5	.5
14	.7	.7	.6	.6	.6	.6
16	.8	.8	.7	.7	.7	.7
18	.9	.9	.8	.8	.8	.8
20	1.0	1.0	1.0	1.0	.9	.9
22	1.2	1.2	1.2	1.2	1.0	1.0
24	1.4	1.4	1.4	1.3	1.2	1.2
26	1.6	1.6	1.6	1.5	1.4	1.3
28	1.8	1.8	1.8	1.7	1.6	1.5
30	2.1	2.0	2.0	1.9	1.8	1.7
32	2.4	2.2	2.2	2.1	2.0	1.9
34	2.7	2.5	2.4	2.3	2.2	2.1
36	3.0	2.8	2.7	2.5	2.4	2.3
38	3.3	3.1	2.9	2.8	2.6	2.5
40	3.5	3.3	3.1	3.0	2.8	2.7

Table 1.—Continued

D.B.H.	Form Class						
	71	72	73	74	75	76	77
Inches	Taper in Inches						
6	.4	.4	.4	.4	.4	.4	.4
8	.5	.5	.5	.5	.5	.4	.4
10	.6	.6	.6	.5	.5	.5	.5
12	.7	.7	.7	.6	.6	.6	.6
14	.8	.8	.8	.7	.7	.7	.7
16	.9	.9	.9	.8	.8	.8	.8
18	1.1	1.0	1.0	1.0	.9	.9	.9
20	1.3	1.2	1.2	1.2	1.1	1.1	1.0
22	1.5	1.4	1.4	1.4	1.3	1.3	1.2
24	1.7	1.7	1.6	1.6	1.5	1.5	1.4
26	2.0	2.0	1.9	1.8	1.7	1.7	1.6
28	2.4	2.3	2.2	2.1	2.0	2.0	1.9
30	2.8	2.7	2.6	2.4	2.3	2.3	2.2
32	3.2	3.1	3.0	2.8	2.7	2.6	2.5
34	3.7	3.5	3.4	3.2	3.1	2.9	2.8
36	4.1	3.9	3.8	3.6	3.4	3.2	3.1
38	4.5	4.3	4.1	3.9	3.7	3.5	3.4
40	4.8	4.6	4.4	4.2	4.0	3.8	3.6

D.B.H.	Form Class						
	84	85	86	87	88	89	90
Inches	Taper in Inches						
6	.3	.3	.3	.3	.3	.3	.3
8	.4	.4	.4	.4	.3	.3	.3
10	.4	.4	.4	.4	.4	.4	.4
12	.5	.5	.5	.5	.4	.4	.4
14	.6	.6	.5	.5	.5	.5	.5
16	.7	.6	.6	.6	.6	.6	.5
18	.8	.7	.7	.7	.7	.7	.6
20	.9	.8	.8	.8	.8	.8	.7
22	1.0	1.0	1.0	1.0	.9	.9	.9
24	1.2	1.2	1.1	1.1	1.0	1.0	1.0
26	1.3	1.3	1.2	1.2	1.1	1.1	1.1
28	1.5	1.4	1.3	1.3	1.2	1.2	1.2
30	1.6	1.6	1.5	1.4	1.4	1.3	1.3
32	1.8	1.7	1.7	1.6	1.5	1.4	1.4
34	2.0	1.9	1.8	1.7	1.6	1.6	1.5
36	2.2	2.1	2.0	1.9	1.8	1.7	1.6
38	2.4	2.3	2.1	2.0	1.9	1.8	1.8
40	2.6	2.5	2.3	2.2	2.1	2.0	2.0

Table 2.--Gross volume (cubic feet, inside bark)
Form Class 65 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.0	1.3	1.5	1.7	1.9	2.1
6	1.4	1.8	2.1	2.3	2.6	2.9
7	1.9	2.4	2.7	3.1	3.4	3.8
8	2.4	3.0	3.4	3.8	4.3	4.7
9	2.9	3.7	4.2	4.7	5.2	5.7
10	3.6	4.5	5.1	5.7	6.3	6.9

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	4.5 - 6"	6.0 - 6"	7.5 - 5"		
11	5.4 - 7	7.2 - 6	9.1 - 6		
12	6.4 - 8	8.6 - 7	10.7 - 6	12.2 - 6"	13.8 - 5"
13	7.6 - 8	10.2 - 8	12.7 - 7	14.6 - 6	16.4 - 6
14	8.7 - 9	11.7 - 8	14.7 - 7	16.9 - 7	19.1 - 6
15	10.1 - 10	13.6 - 9	17.0 - 8	19.6 - 7	22.2 - 7
16	11.5 - 10	15.4 - 9	19.4 - 8	22.4 - 8	25.4 - 7
17	13.2 - 11	17.7 - 10	22.2 - 9	25.6 - 8	29.0 - 8
18	14.8 - 12	19.8 - 11	24.9 - 10	28.8 - 9	32.7 - 8
19	16.6 - 12	22.3 - 11	28.0 - 10	32.4 - 10	36.8 - 9
20	18.4 - 13	24.7 - 12	31.0 - 11	35.9 - 10	40.8 - 9
21	20.5 - 14	27.4 - 13	34.4 - 11	39.9 - 11	45.4 - 10
22	22.6 - 14	30.2 - 13	37.9 - 12	44.0 - 11	50.0 - 10
23	25.0 - 15	33.4 - 14	41.8 - 13	48.5 - 12	55.2 - 11
24	27.3 - 16	36.4 - 14	45.6 - 13	53.0 - 12	60.4 - 12
25	30.0 - 16	40.0 - 15	50.0 - 14	58.1 - 13	66.2 - 12
26	32.8 - 17	43.6 - 16	54.4 - 14	63.2 - 14	71.9 - 13
27	36.0 - 18	47.7 - 16	59.4 - 15	69.0 - 14	78.6 - 13
28	39.2 - 18	51.8 - 17	64.4 - 16	74.8 - 15	85.2 - 14
29	42.7 - 19	56.2 - 18	69.8 - 16	81.0 - 15	92.2 - 14
30	46.2 - 19	60.8 - 18	75.3 - 17	87.2 - 16	99.2 - 15
31	50.4 - 20	66.0 - 19	81.5 - 17	94.4 - 16	107.4 - 15
32	54.5 - 21	71.1 - 19	87.7 - 18	101.6 - 17	115.5 - 16
33	59.0 - 21	76.7 - 20	94.4 - 19	109.3 - 18	124.2 - 17
34	63.6 - 22	82.4 - 21	101.2 - 19	117.0 - 18	132.9 - 17
35	68.2 - 23	88.2 - 21	108.2 - 20	125.2 - 19	142.1 - 18
36	72.9 - 23	94.1 - 22	115.3 - 21	133.3 - 20	151.3 - 18
37	77.6 - 24	100.0 - 23	122.4 - 21	141.6 - 20	160.9 - 19
38	82.2 - 25	105.9 - 23	129.6 - 22	150.0 - 21	170.5 - 20
39	86.9 - 25	112.0 - 24	137.0 - 22	158.6 - 21	180.2 - 20
40	91.6 - 26	118.0 - 25	144.4 - 23	167.1 - 22	189.8 - 21

Table 2.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	2.3	2.5	2.7	2.9	3.1	3.3	3.5
6	3.1	3.4	3.7	3.9	4.2	4.5	4.7
7	4.1	4.5	4.8	5.2	5.5	5.9	6.2
8	5.1	5.5	6.0	6.4	6.8	7.2	7.7
9	6.2	6.7	7.2	7.7	8.2	8.7	9.2
10	7.4	8.0	8.6	9.2	9.8	10.4	11.0

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12						
13						
14						
15						
16	27.7 - 6"	30.0 - 5"				
17	31.7 - 7	34.4 - 6				
18	35.7 - 7	38.7 - 6				
19	40.2 - 8	43.5 - 7				
20	44.6 - 8	48.3 - 7	51.3 - 6"	54.3 - 5"		
21	49.6 - 9	53.9 - 8	57.4 - 7	60.8 - 6		
22	54.8 - 9	59.5 - 8	63.4 - 7	67.4 - 6		
23	60.3 - 10	65.4 - 9	70.0 - 8	74.6 - 7		
24	65.9 - 10	71.4 - 9	76.6 - 8	81.9 - 7		
25	72.4 - 11	78.6 - 10	84.3 - 9	90.0 - 8		
26	78.8 - 12	85.7 - 10	92.0 - 9	98.2 - 8		
27	86.0 - 12	93.4 - 11	100.3 - 10	107.2 - 9		
28	93.1 - 13	101.0 - 11	108.6 - 10	116.1 - 9	123.0 - 8"	129.9 - 6"
29	100.7 - 13	109.2 - 12	117.6 - 11	126.0 - 10	133.8 - 8	141.7 - 7
30	108.4 - 14	117.5 - 12	126.6 - 11	135.8 - 10	144.6 - 9	153.5 - 7
31	117.4 - 14	127.4 - 13	137.0 - 12	146.6 - 10	156.3 - 9	166.0 - 8
32	126.4 - 15	137.2 - 13	147.3 - 12	157.4 - 11	168.0 - 10	178.5 - 8
33	135.8 - 15	147.4 - 14	158.3 - 13	169.2 - 11	180.7 - 10	192.2 - 9
34	145.3 - 16	157.7 - 14	169.3 - 13	180.9 - 12	193.4 - 11	205.9 - 9
35	155.4 - 16	168.6 - 15	181.1 - 14	193.6 - 12	206.6 - 11	219.6 - 10
36	165.4 - 17	179.6 - 16	193.0 - 14	206.3 - 13	219.8 - 12	233.3 - 10
37	175.8 - 18	190.8 - 16	205.3 - 15	219.8 - 14	234.0 - 12	248.3 - 11
38	186.3 - 18	202.1 - 17	217.6 - 15	233.2 - 14	248.2 - 13	263.3 - 11
39	197.1 - 19	214.0 - 17	230.1 - 16	246.2 - 15	262.2 - 13	278.2 - 12
40	207.8 - 19	225.9 - 18	242.5 - 17	259.1 - 15	276.1 - 14	293.1 - 12

Table 3.--Gross volume (cubic feet, inside bark)
Form Class 66 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.1	1.3	1.5	1.7	2.0	2.2
6	1.5	1.8	2.1	2.4	2.7	2.9
7	1.9	2.4	2.7	3.1	3.4	3.8
8	2.4	3.0	3.4	3.9	4.3	4.8
9	3.0	3.8	4.3	4.8	5.4	5.9
10	3.7	4.7	5.3	5.9	6.5	7.1

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	4.7 - 7"	6.2 - 6"	7.8 - 5"		
11	5.6 - 7	7.5 - 6	9.4 - 6		
12	6.6 - 8	8.8 - 7	11.0 - 6	12.6 - 6"	14.3 - 5"
13	7.8 - 9	10.4 - 8	13.0 - 7	15.0 - 6	17.0 - 6
14	8.9 - 9	12.0 - 8	15.1 - 7	17.4 - 7	19.6 - 6
15	10.3 - 10	13.9 - 9	17.5 - 8	20.2 - 7	22.9 - 7
16	11.7 - 11	15.8 - 10	19.9 - 9	23.0 - 8	26.2 - 7
17	13.4 - 11	18.0 - 10	22.7 - 9	26.3 - 9	29.9 - 8
18	15.0 - 12	20.2 - 11	25.5 - 10	29.6 - 9	33.6 - 8
19	17.0 - 13	22.8 - 12	28.7 - 10	33.2 - 10	37.8 - 9
20	18.9 - 13	25.4 - 12	31.9 - 11	37.0 - 10	42.1 - 10
21	20.9 - 14	28.1 - 13	35.3 - 12	41.0 - 11	46.6 - 10
22	22.9 - 14	30.8 - 13	38.7 - 12	44.9 - 11	51.1 - 11
23	25.2 - 15	33.9 - 14	42.6 - 13	49.5 - 12	56.4 - 11
24	27.6 - 16	37.0 - 15	46.4 - 13	54.0 - 13	61.7 - 12
25	30.6 - 16	40.9 - 15	51.2 - 14	59.6 - 13	68.0 - 12
26	33.5 - 17	44.8 - 16	56.0 - 15	65.1 - 14	74.2 - 13
27	36.8 - 18	48.9 - 17	61.0 - 15	71.0 - 14	81.0 - 14
28	40.0 - 18	53.0 - 17	66.1 - 16	76.9 - 15	87.7 - 14
29	43.5 - 19	57.6 - 18	71.6 - 17	83.2 - 16	94.8 - 15
30	47.0 - 20	62.0 - 18	77.0 - 17	89.4 - 16	101.8 - 15
31	51.0 - 20	67.0 - 19	83.1 - 18	96.5 - 17	109.9 - 16
32	55.0 - 21	72.1 - 20	89.2 - 18	103.6 - 17	118.0 - 16
33	59.3 - 22	77.6 - 20	95.8 - 19	111.2 - 18	126.5 - 17
34	63.6 - 22	83.0 - 21	102.3 - 20	118.6 - 19	135.0 - 18
35	68.5 - 23	89.2 - 22	109.8 - 20	127.4 - 19	144.9 - 18
36	73.4 - 24	95.4 - 22	117.4 - 21	136.1 - 20	154.8 - 19
37	78.1 - 24	101.4 - 23	124.6 - 22	144.6 - 21	164.6 - 20
38	82.8 - 25	107.3 - 24	131.8 - 22	153.0 - 21	174.3 - 20
39	87.2 - 26	113.1 - 24	139.0 - 23	161.4 - 22	183.7 - 21
40	91.6 - 26	118.8 - 25	146.1 - 23	169.6 - 22	193.1 - 21

Table 3.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	2.4	2.6	2.9	3.1	3.3	3.5	3.8
6	3.2	3.5	3.8	4.1	4.4	4.6	4.9
7	4.1	4.5	4.8	5.2	5.5	5.9	6.2
8	5.2	5.6	6.1	6.5	7.0	7.4	7.8
9	6.4	6.9	7.5	8.0	8.5	9.0	9.6
10	7.8	8.4	9.0	9.6	10.2	10.8	11.4

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12						
13						
14						
15						
16	28.6 - 7"	31.0 - 6"				
17	32.6 - 7	35.4 - 6				
18	36.8 - 8	39.9 - 7				
19	41.4 - 8	44.9 - 7				
20	46.0 - 9	49.9 - 8	53.0 - 6"	56.2 - 5"		
21	51.0 - 9	55.4 - 8	59.0 - 7	62.7 - 6		
22	56.0 - 10	61.0 - 9	65.1 - 8	69.2 - 6		
23	61.7 - 10	67.0 - 9	71.8 - 8	76.6 - 7		
24	67.4 - 11	73.1 - 9	78.5 - 8	83.9 - 7		
25	74.4 - 11	80.8 - 10	86.8 - 9	92.8 - 8		
26	81.4 - 12	88.6 - 11	95.2 - 10	101.7 - 8		
27	88.7 - 12	96.4 - 11	103.6 - 10	110.8 - 9		
28	96.0 - 13	104.2 - 12	112.1 - 11	120.0 - 9	127.2 - 8"	134.4 - 6"
29	103.7 - 13	112.5 - 12	121.2 - 11	130.0 - 10	138.2 - 9	146.4 - 7
30	111.4 - 14	120.9 - 13	130.4 - 11	139.9 - 10	149.1 - 9	158.3 - 8
31	120.3 - 14	130.7 - 13	140.7 - 12	150.7 - 11	160.8 - 9	170.8 - 8
32	129.2 - 15	140.5 - 14	151.0 - 12	161.5 - 11	172.4 - 10	183.3 - 9
33	138.6 - 16	150.6 - 14	161.8 - 13	173.1 - 12	185.0 - 10	197.0 - 9
34	147.8 - 16	160.7 - 15	172.7 - 13	184.7 - 12	197.6 - 11	210.6 - 10
35	158.8 - 17	172.6 - 15	185.5 - 14	198.4 - 13	212.0 - 12	225.5 - 10
36	169.6 - 17	184.4 - 16	198.3 - 15	212.2 - 13	226.3 - 12	240.4 - 11
37	180.2 - 18	195.8 - 17	210.8 - 15	225.9 - 14	240.8 - 13	255.7 - 11
38	190.8 - 19	207.2 - 17	223.4 - 16	239.6 - 15	255.3 - 13	271.0 - 12
39	201.3 - 19	218.9 - 18	235.6 - 16	252.4 - 15	269.1 - 14	285.8 - 12
40	211.8 - 20	230.6 - 18	247.9 - 17	265.2 - 15	282.8 - 14	300.5 - 12

Table 4.--Gross volume (cubic feet, inside bark)
Form Class 67 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.1	1.3	1.5	1.7	2.0	2.2
6	1.5	1.8	2.1	2.4	2.7	2.9
7	1.9	2.4	2.8	3.1	3.5	3.9
8	2.5	3.1	3.6	4.0	4.5	4.9
9	3.0	3.8	4.3	4.9	5.4	6.0
10	3.7	4.7	5.3	6.0	6.6	7.2

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	4.7 - 7"	6.3 - 6"	7.9 - 5"		
11	5.8 - 7	7.7 - 7	9.6 - 6		
12	6.8 - 8	9.1 - 7	11.4 - 6	13.0 - 6"	14.7 - 5"
13	8.0 - 9	10.8 - 8	13.6 - 7	15.6 - 6	17.6 - 6
14	9.3 - 9	12.5 - 9	15.7 - 8	18.1 - 7	20.5 - 6
15	10.6 - 10	14.3 - 9	18.0 - 8	20.8 - 8	23.6 - 7
16	12.0 - 11	16.2 - 10	20.4 - 9	23.6 - 8	26.8 - 7
17	13.7 - 11	18.5 - 10	23.3 - 9	27.0 - 9	30.8 - 8
18	15.4 - 12	20.8 - 11	26.2 - 10	30.4 - 9	34.7 - 9
19	17.2 - 13	23.3 - 12	29.4 - 11	34.2 - 10	38.9 - 9
20	19.1 - 13	25.8 - 12	32.5 - 11	37.8 - 11	43.1 - 10
21	21.3 - 14	28.7 - 13	36.1 - 12	42.0 - 11	47.8 - 10
22	23.5 - 15	31.6 - 14	39.7 - 12	46.2 - 12	52.6 - 11
23	26.0 - 15	35.0 - 14	44.0 - 13	51.2 - 12	58.4 - 11
24	28.6 - 16	38.4 - 15	48.2 - 14	56.2 - 13	64.1 - 12
25	31.4 - 17	42.0 - 16	52.7 - 14	61.4 - 13	70.0 - 13
26	34.2 - 17	45.7 - 16	57.2 - 15	66.6 - 14	76.0 - 13
27	37.4 - 18	49.9 - 17	62.4 - 16	72.7 - 15	83.0 - 14
28	40.7 - 19	54.2 - 18	67.7 - 16	78.9 - 15	90.1 - 14
29	44.2 - 19	58.7 - 18	73.2 - 17	85.2 - 16	97.3 - 15
30	47.8 - 20	63.3 - 19	78.8 - 17	91.6 - 16	104.5 - 15
31	51.8 - 21	68.8 - 19	85.7 - 18	99.2 - 17	112.7 - 16
32	55.9 - 21	74.2 - 20	92.6 - 19	106.8 - 18	120.9 - 17
33	60.4 - 22	79.6 - 21	98.8 - 19	114.4 - 18	130.0 - 17
34	65.0 - 23	85.0 - 21	105.1 - 20	122.2 - 19	139.2 - 18
35	69.4 - 23	90.7 - 22	112.0 - 21	130.2 - 20	148.4 - 19
36	73.9 - 24	96.4 - 23	119.0 - 21	138.3 - 20	157.6 - 19
37	78.9 - 25	102.8 - 23	126.8 - 22	147.4 - 21	168.1 - 20
38	83.9 - 25	109.2 - 24	134.6 - 23	156.6 - 22	178.6 - 21
39	88.3 - 26	115.0 - 25	141.8 - 23	165.0 - 22	188.1 - 21
40	92.7 - 27	120.8 - 25	149.0 - 24	173.3 - 23	197.6 - 22

Table 4.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	2.4	2.6	2.9	3.1	3.3	3.5	3.8
6	3.2	3.5	3.8	4.1	4.4	4.6	4.9
7	4.2	4.6	5.0	5.3	5.7	6.1	6.4
8	5.4	5.9	6.3	6.8	7.2	7.7	8.2
9	6.5	7.1	7.6	8.2	8.7	9.2	9.8
10	7.9	8.5	9.2	9.8	10.4	11.1	11.7

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) end scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12						
13						
14						
15						
16	29.3 - 7"	31.8 - 6"				
17	33.7 - 7	36.6 - 6				
18	38.0 - 8	41.3 - 7				
19	42.6 - 8	46.2 - 7				
20	47.2 - 9	51.2 - 8	54.5 - 7"	57.8 - 6"		
21	52.4 - 9	57.0 - 8	60.8 - 7	64.6 - 6		
22	57.8 - 10	62.9 - 9	67.2 - 8	71.4 - 7		
23	64.0 - 10	69.5 - 9	74.4 - 8	79.4 - 7		
24	70.1 - 11	76.1 - 10	81.8 - 9	87.5 - 8		
25	76.7 - 11	83.4 - 10	89.6 - 9	95.9 - 8		
26	83.4 - 12	90.8 - 11	97.6 - 10	104.3 - 9		
27	91.0 - 13	99.0 - 11	106.5 - 10	114.0 - 9		
28	98.7 - 13	107.3 - 12	115.6 - 11	123.8 - 10	131.4 - 9"	138.9 - 7"
29	106.6 - 14	115.8 - 12	124.9 - 11	134.0 - 10	142.5 - 9	151.0 - 7
30	114.4 - 14	124.3 - 13	134.2 - 12	144.1 - 11	153.6 - 9	163.2 - 8
31	123.5 - 15	134.3 - 13	144.6 - 12	155.0 - 11	165.4 - 10	175.9 - 9
32	132.6 - 15	144.3 - 14	155.2 - 13	166.0 - 11	177.3 - 10	188.6 - 9
33	142.6 - 16	155.2 - 15	166.9 - 13	178.6 - 12	191.0 - 11	203.4 - 10
34	152.6 - 17	166.1 - 15	178.7 - 14	191.3 - 13	204.8 - 11	218.3 - 10
35	162.8 - 17	177.1 - 16	190.6 - 14	204.1 - 13	218.2 - 12	232.2 - 11
36	172.8 - 18	188.1 - 16	202.5 - 15	216.9 - 14	231.4 - 12	246.0 - 11
37	184.3 - 18	200.5 - 17	216.2 - 16	231.8 - 14	247.2 - 13	262.6 - 12
38	195.8 - 19	212.9 - 18	229.8 - 16	246.6 - 15	262.9 - 14	279.2 - 12
39	206.4 - 20	224.8 - 18	242.2 - 17	259.6 - 15	276.9 - 14	294.2 - 12
40	217.1 - 20	236.6 - 19	254.6 - 17	272.5 - 16	290.8 - 14	309.2 - 13

Table 5.--Gross volume (cubic feet, inside bark)
Form Class 68 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.1	1.3	1.5	1.7	2.0	2.2
6	1.5	1.8	2.1	2.4	2.7	3.0
7	2.0	2.5	2.9	3.3	3.7	4.0
8	2.5	3.1	3.6	4.0	4.5	4.9
9	3.0	3.9	4.4	5.0	5.5	6.1
10	3.8	4.8	5.4	6.1	6.7	7.3

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	4.8 - 7"	6.4 - 6"	8.1 - 5"		
11	5.8 - 7	7.8 - 7	9.9 - 6		
12	6.9 - 8	9.3 - 7	11.7 - 7	13.5 - 6"	15.3 - 5"
13	8.1 - 9	11.0 - 8	13.8 - 7	15.9 - 7	18.0 - 6
14	9.3 - 9	12.6 - 9	15.9 - 8	18.4 - 7	20.8 - 6
15	10.8 - 10	14.6 - 9	18.5 - 8	21.4 - 8	24.4 - 7
16	12.4 - 11	16.8 - 10	21.1 - 9	24.5 - 8	27.9 - 8
17	14.0 - 12	19.0 - 11	23.9 - 10	27.8 - 9	31.6 - 8
18	15.7 - 12	21.2 - 11	26.7 - 10	31.0 - 9	35.4 - 9
19	17.6 - 13	23.8 - 12	30.0 - 11	34.9 - 10	39.9 - 9
20	19.6 - 14	26.5 - 13	33.4 - 11	38.9 - 11	44.4 - 10
21	21.8 - 14	29.5 - 13	37.2 - 12	43.3 - 11	49.4 - 11
22	24.0 - 15	32.5 - 14	41.0 - 13	47.8 - 12	54.5 - 11
23	26.4 - 16	35.7 - 14	45.0 - 13	52.5 - 13	60.0 - 12
24	28.9 - 16	38.9 - 15	49.0 - 14	57.2 - 13	65.4 - 12
25	31.9 - 17	42.9 - 16	53.9 - 15	62.8 - 14	71.8 - 13
26	34.9 - 18	46.8 - 16	58.8 - 15	68.6 - 14	78.3 - 13
27	38.0 - 18	50.9 - 17	63.8 - 16	74.4 - 15	85.0 - 14
28	41.1 - 19	54.9 - 18	68.7 - 16	80.2 - 16	91.7 - 15
29	44.8 - 20	59.7 - 18	74.6 - 17	87.0 - 16	99.4 - 15
30	48.6 - 20	64.6 - 19	80.6 - 18	93.9 - 17	107.2 - 16
31	52.7 - 21	69.8 - 20	87.0 - 18	101.4 - 17	115.8 - 16
32	56.8 - 22	75.2 - 20	93.5 - 19	109.0 - 18	124.5 - 17
33	60.9 - 22	80.4 - 21	99.9 - 20	116.4 - 19	132.9 - 18
34	65.0 - 23	85.6 - 22	106.3 - 20	123.8 - 19	141.4 - 18
35	70.0 - 24	92.0 - 22	114.0 - 21	132.8 - 20	151.5 - 19
36	74.9 - 24	98.2 - 23	121.6 - 22	141.6 - 21	161.6 - 20
37	79.4 - 25	104.0 - 24	128.7 - 22	150.0 - 21	171.3 - 20
38	83.9 - 26	109.8 - 24	135.8 - 23	158.4 - 22	181.0 - 21
39	88.6 - 26	116.1 - 25	143.6 - 24	167.4 - 23	191.3 - 22
40	93.3 - 27	122.3 - 26	151.3 - 24	176.4 - 23	201.6 - 22

Table 5.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	2.4	2.6	2.9	3.1	3.3	3.5	3.8
6	3.3	3.6	3.9	4.2	4.5	4.8	5.1
7	4.4	4.8	5.2	5.6	6.0	6.3	6.7
8	5.4	5.9	6.3	6.8	7.2	7.7	8.2
9	6.6	7.2	7.7	8.3	8.8	9.3	9.9
10	8.0	8.6	9.3	9.9	10.5	11.2	11.8

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12						
13						
14						
15						
16	30.5 - 7"	33.1 - 6"				
17	34.6 - 7	37.6 - 6				
18	38.8 - 8	42.1 - 7				
19	43.7 - 8	47.5 - 7				
20	48.6 - 9	52.9 - 8	56.3 - 7"	59.7 - 6"		
21	54.2 - 10	59.1 - 9	63.0 - 7	67.0 - 6		
22	59.9 - 10	65.3 - 9	69.8 - 8	74.4 - 7		
23	65.8 - 11	71.6 - 10	76.8 - 8	82.0 - 7		
24	71.6 - 11	77.8 - 10	83.7 - 9	89.6 - 8		
25	78.8 - 12	85.8 - 11	92.3 - 9	98.8 - 8		
26	86.0 - 12	93.8 - 11	100.9 - 10	108.0 - 9		
27	93.3 - 13	101.6 - 12	109.4 - 11	117.2 - 9		
28	100.6 - 13	109.4 - 12	117.9 - 11	126.4 - 10	134.2 - 8"	141.9 - 7"
29	109.0 - 14	118.6 - 13	128.0 - 12	137.4 - 10	146.2 - 9	155.0 - 8
30	117.5 - 14	127.8 - 13	138.1 - 12	148.4 - 11	158.3 - 10	168.2 - 8
31	127.1 - 15	138.4 - 14	149.3 - 13	160.2 - 11	171.0 - 10	181.8 - 9
32	136.8 - 16	149.0 - 14	160.4 - 13	171.9 - 12	183.7 - 11	195.5 - 9
33	146.0 - 16	159.1 - 15	171.4 - 14	183.6 - 12	196.4 - 11	209.3 - 10
34	155.3 - 17	169.2 - 15	182.2 - 14	195.2 - 13	209.2 - 12	223.1 - 10
35	166.4 - 18	181.4 - 16	195.4 - 15	209.4 - 13	223.9 - 12	238.4 - 11
36	177.6 - 18	193.5 - 17	208.5 - 15	223.5 - 14	238.6 - 13	253.8 - 11
37	188.1 - 19	204.9 - 17	221.1 - 16	237.3 - 15	253.2 - 13	269.2 - 12
38	198.6 - 19	216.3 - 18	233.7 - 17	251.1 - 15	267.9 - 14	284.7 - 12
39	210.2 - 20	229.2 - 19	247.2 - 17	265.2 - 16	283.2 - 14	301.1 - 13
40	221.8 - 21	242.1 - 19	260.8 - 18	279.4 - 16	298.4 - 15	317.5 - 13

Table 6.--Gross volume (cubic feet, inside bark)
Form Class 69 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.1	1.3	1.5	1.7	2.0	2.2
6	1.5	1.8	2.1	2.4	2.7	3.0
7	2.0	2.5	2.9	3.3	3.7	4.0
8	2.6	3.2	3.7	4.2	4.6	5.1
9	3.2	4.0	4.6	5.1	5.7	6.3
10	3.8	4.9	5.6	6.2	6.9	7.5

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	4.9 - 7"	6.6 - 6"	8.3 - 5"		
11	6.0 - 8	8.1 - 7	10.2 - 6		
12	7.1 - 8	9.6 - 7	12.1 - 7	13.9 - 6"	15.7 - 5
13	8.4 - 9	11.4 - 8	14.3 - 7	16.5 - 7	18.7 - 6
14	9.8 - 10	13.0 - 9	16.5 - 8	19.1 - 7	21.7 - 7
15	11.0 - 10	15.0 - 9	18.9 - 9	22.0 - 8	25.0 - 7
16	12.4 - 11	16.8 - 10	21.3 - 9	24.8 - 8	28.2 - 8
17	14.2 - 12	19.2 - 11	24.3 - 10	28.2 - 9	32.2 - 8
18	15.9 - 12	21.6 - 11	27.3 - 10	31.8 - 10	36.3 - 9
19	17.9 - 13	24.4 - 12	30.8 - 11	35.8 - 10	40.9 - 10
20	19.9 - 14	27.0 - 13	34.2 - 12	39.8 - 11	45.5 - 10
21	22.1 - 14	30.0 - 13	38.0 - 12	44.3 - 12	50.6 - 11
22	24.3 - 15	33.0 - 14	41.8 - 13	48.8 - 12	55.7 - 11
23	27.0 - 16	36.6 - 15	46.2 - 14	54.0 - 13	61.7 - 12
24	29.6 - 17	40.0 - 15	50.5 - 14	59.1 - 13	67.7 - 13
25	32.4 - 17	43.8 - 16	55.2 - 15	64.5 - 14	73.8 - 13
26	35.3 - 18	47.6 - 17	59.8 - 15	69.8 - 15	79.8 - 14
27	38.6 - 19	51.9 - 17	65.2 - 16	76.1 - 15	87.0 - 14
28	41.9 - 19	56.2 - 18	70.5 - 17	82.4 - 16	94.3 - 15
29	45.4 - 20	60.8 - 19	76.2 - 17	89.0 - 16	101.9 - 15
30	49.0 - 21	65.5 - 19	82.0 - 18	95.8 - 17	109.5 - 16
31	53.1 - 21	70.8 - 20	88.4 - 19	103.3 - 18	118.2 - 17
32	57.2 - 22	76.0 - 21	94.9 - 19	111.0 - 18	127.0 - 17
33	61.8 - 23	82.0 - 21	102.1 - 20	119.2 - 19	136.4 - 18
34	66.5 - 23	87.9 - 22	109.3 - 21	127.6 - 20	145.8 - 19
35	71.0 - 24	93.7 - 23	116.4 - 21	135.8 - 20	155.2 - 19
36	75.4 - 25	99.4 - 23	123.4 - 22	144.0 - 21	164.5 - 20
37	80.2 - 25	105.6 - 24	131.0 - 23	153.0 - 22	174.9 - 21
38	84.9 - 26	111.7 - 25	138.5 - 23	161.9 - 22	185.3 - 21
39	89.7 - 27	118.0 - 25	146.4 - 24	171.1 - 23	195.8 - 22
40	94.5 - 28	124.4 - 26	154.4 - 25	180.4 - 24	206.3 - 23

Table 6.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	2.4	2.6	2.9	3.1	3.3	3.5	3.8
6	3.3	3.6	3.9	4.2	4.5	4.8	5.1
7	4.4	4.8	5.2	5.6	6.0	6.3	6.7
8	5.6	6.1	6.6	7.0	7.5	8.0	8.5
9	6.8	7.4	8.0	8.5	9.1	9.7	10.2
10	8.2	8.9	9.5	10.2	10.8	11.5	12.2

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12						
13						
14	23.6 - 6"	25.4 - 5"				
15	27.2 - 6	29.5 - 6				
16	30.9 - 7	33.6 - 6				
17	35.3 - 7	38.4 - 7				
18	39.8 - 8	43.3 - 7				
19	44.8 - 9	48.8 - 8				
20	50.0 - 9	54.4 - 8	58.0 - 7"	61.5 - 6"		
21	55.6 - 10	60.6 - 9	64.8 - 8	68.9 - 7		
22	61.3 - 10	66.9 - 9	71.6 - 8	76.3 - 7		
23	67.8 - 11	73.8 - 10	79.2 - 9	84.6 - 8		
24	74.2 - 11	80.7 - 10	86.8 - 9	93.0 - 8		
25	81.0 - 12	88.2 - 11	95.0 - 10	101.7 - 9		
26	87.8 - 13	95.8 - 11	103.1 - 10	110.4 - 9		
27	95.6 - 13	104.2 - 12	112.3 - 11	120.4 - 10		
28	103.5 - 14	112.7 - 12	121.6 - 11	130.4 - 10	138.5 - 9"	146.6 - 7"
29	111.8 - 14	121.8 - 13	131.6 - 12	141.4 - 11	150.6 - 9	159.7 - 8
30	120.2 - 15	130.9 - 13	141.6 - 12	152.3 - 11	162.6 - 10	172.8 - 9
31	129.9 - 15	141.6 - 14	152.9 - 13	164.2 - 12	175.4 - 10	186.6 - 9
32	139.7 - 16	152.4 - 15	164.2 - 13	176.0 - 12	188.2 - 11	200.5 - 10
33	150.0 - 17	163.6 - 15	176.3 - 14	189.0 - 13	202.4 - 12	215.8 - 10
34	160.4 - 17	174.9 - 16	188.5 - 15	202.1 - 13	216.6 - 12	231.2 - 11
35	170.6 - 18	186.1 - 16	200.6 - 15	215.2 - 14	230.3 - 13	245.4 - 11
36	180.9 - 18	197.3 - 17	212.8 - 16	228.3 - 14	244.0 - 13	259.6 - 12
37	192.3 - 19	209.7 - 18	226.4 - 16	243.2 - 15	259.8 - 14	276.4 - 12
38	203.7 - 20	222.1 - 18	240.2 - 17	258.2 - 16	275.6 - 14	293.1 - 13
39	215.5 - 20	235.2 - 19	253.9 - 18	272.6 - 16	291.2 - 15	309.8 - 13
40	227.3 - 21	248.3 - 20	267.6 - 18	287.0 - 17	306.8 - 15	326.5 - 14

Table 7.--Gross volume (cubic feet, inside bark)
Form Class 70 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.1	1.4	1.6	1.9	2.1	2.3
6	1.5	1.9	2.2	2.5	2.8	3.2
7	2.1	2.6	3.0	3.4	3.8	4.2
8	2.6	3.4	3.9	4.4	4.9	5.4
9	3.2	4.2	4.8	5.4	6.0	6.6
10	4.0	5.0	5.7	6.4	7.1	7.7

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	5.0 - 7"	6.8 - 6"	8.5 - 6"		
11	6.1 - 8	8.2 - 7	10.4 - 6		
12	7.2 - 8	9.8 - 8	12.3 - 7	14.2 - 6"	16.0 - 6"
13	8.5 - 9	11.6 - 8	14.6 - 7	16.8 - 7	19.1 - 6
14	9.8 - 10	13.4 - 9	16.9 - 8	19.6 - 7	22.2 - 7
15	11.3 - 10	15.4 - 10	19.4 - 9	22.6 - 8	25.8 - 7
16	12.8 - 11	17.4 - 10	22.0 - 9	25.6 - 9	29.3 - 8
17	14.6 - 12	19.8 - 11	25.1 - 10	29.2 - 9	33.4 - 9
18	16.4 - 13	22.3 - 12	28.2 - 11	32.9 - 10	37.6 - 9
19	18.4 - 13	25.0 - 12	31.6 - 11	36.9 - 10	42.2 - 10
20	20.4 - 14	27.8 - 13	35.1 - 12	41.0 - 11	46.9 - 10
21	22.6 - 15	30.8 - 14	39.0 - 13	45.6 - 12	52.1 - 11
22	24.9 - 15	33.9 - 14	42.9 - 13	50.1 - 12	57.3 - 12
23	27.6 - 16	37.4 - 15	47.3 - 14	55.3 - 13	63.3 - 12
24	30.2 - 17	41.0 - 16	51.7 - 14	60.5 - 14	69.3 - 13
25	33.1 - 17	44.8 - 16	56.6 - 15	66.2 - 14	75.8 - 13
26	36.0 - 18	48.7 - 17	61.4 - 16	71.8 - 15	82.2 - 14
27	39.3 - 19	53.0 - 18	66.8 - 16	78.2 - 15	89.5 - 15
28	42.6 - 20	57.4 - 18	72.1 - 17	84.4 - 16	96.8 - 15
29	46.2 - 20	62.1 - 19	78.0 - 18	91.3 - 17	104.6 - 16
30	49.8 - 21	66.8 - 20	83.8 - 18	98.0 - 17	112.3 - 16
31	54.0 - 22	72.2 - 20	90.4 - 19	105.8 - 18	121.2 - 17
32	58.1 - 22	77.5 - 21	96.9 - 20	113.4 - 19	130.0 - 18
33	62.6 - 23	83.3 - 22	104.0 - 20	121.6 - 19	139.3 - 18
34	67.0 - 24	89.0 - 22	111.0 - 21	129.8 - 20	148.6 - 19
35	71.4 - 24	94.8 - 23	118.2 - 22	138.3 - 21	158.4 - 20
36	75.9 - 25	100.7 - 24	125.5 - 22	146.8 - 21	168.2 - 20
37	80.7 - 26	107.0 - 24	133.2 - 23	156.0 - 22	178.8 - 21
38	85.5 - 27	113.2 - 25	140.9 - 24	165.1 - 23	189.3 - 22
39	90.2 - 27	119.5 - 26	148.8 - 24	174.3 - 23	199.8 - 22
40	95.0 - 28	125.8 - 27	156.7 - 25	183.6 - 24	210.4 - 23

Table 7.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	2.6	2.8	3.1	3.3	3.5	3.8	4.0
6	3.5	3.8	4.1	4.4	4.7	5.1	5.4
7	4.6	5.0	5.4	5.8	6.2	6.6	7.0
8	5.9	6.4	6.9	7.4	7.9	8.4	8.9
9	7.1	7.7	8.3	8.9	9.5	10.1	10.7
10	8.4	9.1	9.8	10.5	11.2	11.8	12.5

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12						
13						
14	24.1 - 6"	26.0 - 5"				
15	28.1 - 7	30.4 - 6				
16	32.1 - 7	34.9 - 6				
17	36.6 - 8	39.9 - 7				
18	41.2 - 8	44.9 - 7				
19	46.4 - 9	50.5 - 8				
20	51.5 - 9	56.1 - 8	59.8 - 7"	63.5 - 6"		
21	57.3 - 10	62.5 - 9	66.8 - 8	71.0 - 7		
22	63.1 - 11	68.9 - 10	73.8 - 8	78.6 - 7		
23	69.6 - 11	75.8 - 10	81.4 - 9	87.0 - 8		
24	76.0 - 12	82.7 - 10	89.1 - 9	95.5 - 8		
25	83.3 - 12	90.8 - 11	97.8 - 10	104.8 - 9		
26	90.6 - 13	98.9 - 12	106.6 - 11	114.2 - 9		
27	98.4 - 13	107.4 - 12	115.8 - 11	124.3 - 10		
28	106.4 - 14	116.0 - 13	125.2 - 12	134.4 - 11	142.8 - 9	151.2 - 8"
29	114.9 - 15	125.2 - 13	135.4 - 13	145.6 - 11	155.1 - 10	164.6 - 8
30	123.4 - 15	134.5 - 14	145.6 - 13	156.7 - 12	167.4 - 10	178.0 - 9
31	133.3 - 16	145.4 - 14	157.1 - 13	168.8 - 12	180.4 - 11	192.1 - 9
32	143.2 - 16	156.3 - 15	168.6 - 14	180.8 - 12	193.5 - 11	206.2 - 10
33	153.4 - 17	167.4 - 16	180.6 - 14	193.8 - 13	207.6 - 12	221.5 - 11
34	163.6 - 18	178.6 - 16	192.6 - 15	206.7 - 14	221.8 - 12	236.8 - 11
35	174.4 - 18	190.5 - 17	205.6 - 16	220.6 - 14	236.3 - 13	252.0 - 12
36	185.3 - 19	202.4 - 17	218.5 - 16	234.6 - 15	250.9 - 13	267.2 - 12
37	196.9 - 20	215.0 - 18	232.4 - 17	249.8 - 15	267.0 - 14	284.2 - 13
38	208.4 - 20	227.5 - 19	246.2 - 17	265.0 - 16	283.2 - 15	301.3 - 13
39	220.2 - 21	240.7 - 19	260.2 - 18	279.6 - 17	298.9 - 15	318.2 - 14
40	232.2 - 21	253.9 - 20	274.0 - 19	294.1 - 17	314.6 - 16	335.0 - 14

Table 8.--Gross volume (cubic feet, inside bark)
Form Class 71 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.2	1.5	1.8	2.0	2.3	2.5
6	1.6	2.0	2.3	2.7	3.0	3.3
7	2.2	2.7	3.1	3.5	4.0	4.4
8	2.7	3.5	4.0	4.5	5.0	5.5
9	3.4	4.3	4.9	5.5	6.1	6.7
10	4.0	5.2	5.9	6.6	7.3	8.0

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	5.2 - 7"	7.0 - 6"	8.8 - 6"		
11	6.3 - 8	8.5 - 7	10.7 - 6		
12	7.4 - 8	10.0 - 8	12.6 - 7	14.6 - 6"	16.5 - 6
13	8.7 - 9	11.8 - 8	14.9 - 8	17.2 - 7	19.6 - 6
14	10.0 - 10	13.6 - 9	17.2 - 8	20.0 - 8	22.7 - 7
15	11.6 - 11	15.8 - 10	20.0 - 9	23.3 - 8	26.6 - 8
16	13.2 - 11	18.0 - 10	22.8 - 9	26.6 - 9	30.4 - 8
17	15.0 - 12	20.5 - 11	26.0 - 10	30.3 - 9	34.6 - 9
18	16.9 - 13	23.0 - 12	29.1 - 11	34.0 - 10	38.9 - 9
19	19.0 - 15	25.8 - 12	32.6 - 11	38.1 - 11	43.6 - 10
20	21.0 - 14	28.6 - 13	36.2 - 12	42.2 - 11	48.3 - 11
21	23.2 - 15	31.6 - 14	40.0 - 13	46.8 - 12	53.6 - 11
22	25.5 - 16	34.7 - 14	43.9 - 13	51.4 - 13	58.8 - 12
23	28.0 - 16	38.1 - 15	48.2 - 14	56.4 - 13	64.7 - 12
24	30.5 - 17	41.5 - 16	52.5 - 15	61.6 - 14	70.6 - 13
25	33.6 - 18	45.6 - 17	57.7 - 15	67.6 - 14	77.6 - 14
26	36.7 - 18	49.8 - 17	62.9 - 16	73.8 - 15	84.6 - 14
27	40.0 - 19	54.2 - 18	68.4 - 17	80.2 - 16	92.0 - 15
28	43.4 - 20	58.6 - 19	73.9 - 17	86.6 - 16	99.4 - 15
29	47.0 - 21	63.4 - 19	79.8 - 18	93.6 - 17	107.3 - 16
30	50.7 - 21	68.2 - 20	85.7 - 19	100.4 - 18	115.2 - 17
31	54.6 - 22	73.3 - 21	92.0 - 19	107.9 - 18	123.8 - 17
32	58.5 - 23	78.4 - 21	98.4 - 20	115.4 - 19	132.5 - 18
33	63.0 - 23	84.2 - 22	105.4 - 21	123.6 - 20	141.8 - 19
34	67.4 - 24	90.0 - 23	112.5 - 21	131.8 - 20	151.2 - 19
35	72.2 - 25	96.3 - 23	120.4 - 22	141.1 - 21	161.8 - 20
36	77.0 - 26	102.6 - 24	128.3 - 23	150.4 - 22	172.5 - 21
37	81.8 - 26	108.9 - 25	136.0 - 23	159.6 - 22	183.2 - 21
38	86.6 - 27	115.2 - 26	143.8 - 24	168.8 - 23	193.8 - 22
39	91.4 - 28	121.6 - 26	151.8 - 25	178.2 - 24	204.5 - 23
40	96.2 - 28	128.0 - 27	159.8 - 25	187.5 - 24	215.2 - 23

Table 8.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	2.8	3.0	3.3	3.5	3.8	4.0	4.3
6	3.7	4.0	4.3	4.7	5.0	5.3	5.7
7	4.8	5.2	5.7	6.1	6.5	6.9	7.4
8	6.0	6.5	7.0	7.5	8.0	8.5	9.0
9	7.2	7.8	8.4	9.0	9.6	10.2	10.8
10	8.7	9.4	10.2	10.9	11.6	12.3	13.0

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12						
13						
14	24.6 - 6"	26.6 - 5"				
15	29.0 - 7	31.4 - 6				
16	33.3 - 7	36.2 - 6				
17	38.0 - 8	41.4 - 7				
18	42.7 - 8	46.5 - 8				
19	47.9 - 9	52.2 - 8				
20	53.1 - 10	57.9 - 9	61.8 - 7"	65.6 - 6"		
21	59.0 - 10	64.4 - 9	68.8 - 8	73.2 - 7		
22	64.8 - 11	70.8 - 10	75.8 - 9	80.9 - 8		
23	71.2 - 11	77.6 - 10	83.4 - 9	89.3 - 8		
24	77.6 - 12	84.5 - 11	91.1 - 10	97.7 - 9		
25	85.4 - 12	93.2 - 11	100.5 - 10	107.8 - 9		
26	93.3 - 13	102.0 - 12	110.0 - 11	118.0 - 10		
27	101.4 - 14	110.8 - 13	119.6 - 11	128.3 - 10		
28	109.4 - 14	119.5 - 13	129.0 - 12	138.6 - 11	147.4 - 9"	156.1 - 8"
29	118.0 - 15	128.8 - 14	139.4 - 12	149.9 - 11	159.8 - 10	169.7 - 9
30	126.7 - 15	138.2 - 14	149.7 - 13	161.2 - 12	172.2 - 11	183.3 - 9
31	136.4 - 16	149.0 - 15	161.1 - 14	173.2 - 12	185.2 - 11	197.3 - 10
32	146.1 - 17	159.7 - 15	172.4 - 14	185.1 - 13	198.2 - 12	211.3 - 10
33	156.4 - 17	171.0 - 16	184.6 - 15	198.2 - 13	212.5 - 12	226.8 - 11
34	166.7 - 18	182.2 - 16	196.8 - 15	211.3 - 14	226.8 - 13	242.2 - 11
35	178.5 - 19	195.2 - 17	210.8 - 16	226.5 - 15	242.6 - 13	258.8 - 12
36	190.3 - 19	208.1 - 18	224.9 - 16	241.7 - 15	258.6 - 14	275.5 - 13
37	202.0 - 20	220.8 - 18	238.9 - 17	257.0 - 16	274.9 - 14	292.8 - 13
38	213.6 - 21	233.5 - 19	253.0 - 18	272.4 - 16	291.2 - 15	310.1 - 14
39	225.7 - 21	246.9 - 20	267.0 - 18	287.2 - 17	307.2 - 15	327.2 - 14
40	237.8 - 22	260.3 - 20	281.2 - 19	302.0 - 17	323.2 - 16	344.3 - 14

Table 9.--Gross volume (cubic feet, inside bark)
Form Class 72 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.2	1.5	1.8	2.0	2.3	2.5
6	1.6	2.0	2.3	2.7	3.0	3.3
7	2.2	2.7	3.1	3.5	4.0	4.4
8	2.8	3.6	4.1	4.6	5.2	5.7
9	3.4	4.4	5.0	5.7	6.3	6.9
10	4.2	5.3	6.0	6.8	7.5	8.2

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) end scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	5.3 - 7	7.2 - 6"	9.0 - 6"		
11	6.4 - 8	8.7 - 7	11.0 - 6		
12	7.6 - 9	10.3 - 8	13.0 - 7	15.0 - 6"	16.9 - 6
13	9.0 - 9	12.2 - 9	15.4 - 8	17.8 - 7	20.3 - 6
14	10.4 - 10	14.2 - 9	17.9 - 8	20.8 - 8	23.7 - 7
15	11.9 - 11	16.2 - 10	20.6 - 9	24.0 - 8	27.3 - 8
16	13.4 - 11	18.3 - 11	23.2 - 10	27.0 - 9	30.9 - 8
17	15.2 - 12	20.8 - 11	26.5 - 10	31.0 - 10	35.4 - 9
18	17.1 - 13	23.4 - 12	29.8 - 11	34.8 - 10	39.8 - 10
19	19.2 - 14	26.2 - 13	33.3 - 12	39.0 - 11	44.6 - 10
20	21.2 - 14	29.0 - 13	36.8 - 12	43.1 - 12	49.4 - 11
21	23.5 - 15	32.2 - 14	40.8 - 13	47.8 - 12	54.8 - 11
22	25.8 - 16	35.3 - 15	44.8 - 14	52.4 - 13	60.1 - 12
23	28.6 - 17	39.1 - 15	49.6 - 14	58.1 - 13	66.6 - 13
24	31.5 - 17	43.0 - 16	54.4 - 15	63.8 - 14	73.2 - 13
25	34.4 - 18	46.8 - 17	59.3 - 16	69.6 - 15	79.8 - 14
26	37.4 - 19	50.8 - 17	64.2 - 16	75.4 - 15	86.5 - 14
27	40.8 - 19	55.4 - 18	70.0 - 17	82.2 - 16	94.3 - 15
28	44.2 - 20	60.0 - 19	75.7 - 18	88.9 - 17	102.1 - 16
29	47.8 - 21	64.7 - 20	81.6 - 18	95.8 - 17	110.0 - 16
30	51.5 - 22	69.6 - 20	87.6 - 19	102.8 - 18	118.0 - 17
31	55.4 - 22	74.7 - 21	94.0 - 20	110.4 - 19	126.8 - 18
32	59.4 - 23	80.0 - 22	100.5 - 20	118.0 - 19	135.6 - 18
33	63.9 - 24	85.8 - 22	107.8 - 21	126.6 - 20	145.4 - 19
34	68.4 - 24	91.8 - 23	115.1 - 22	135.2 - 21	155.3 - 20
35	73.0 - 25	97.8 - 24	122.6 - 22	144.0 - 21	165.4 - 20
36	77.5 - 26	103.8 - 24	130.1 - 23	152.8 - 22	175.4 - 21
37	82.6 - 27	110.5 - 25	138.4 - 24	162.6 - 23	186.9 - 22
38	87.7 - 27	117.2 - 26	146.7 - 24	172.6 - 23	198.4 - 22
39	92.5 - 28	123.6 - 27	154.8 - 25	182.0 - 24	209.2 - 23
40	97.3 - 29	130.0 - 27	162.8 - 26	191.4 - 25	219.9 - 24

Table 9.—Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	2.8	3.0	3.3	3.5	3.8	4.0	4.3
6	3.7	4.0	4.3	4.7	5.0	5.3	5.7
7	4.8	5.2	5.7	6.1	6.5	6.9	7.4
8	6.2	6.7	7.3	7.8	8.3	8.8	9.4
9	7.6	8.2	8.9	9.5	10.1	10.8	11.4
10	9.0	9.7	10.4	11.2	11.9	12.6	13.4

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12						
13						
14	25.8 - 6"	27.8 - 5"				
15	29.8 - 7	32.4 - 6				
16	33.9 - 7	36.9 - 7				
17	38.9 - 8	42.4 - 7				
18	43.8 - 9	47.8 - 8				
19	49.1 - 9	53.6 - 8				
20	54.4 - 10	59.3 - 9	63.4 - 8	67.4 - 7"		
21	60.4 - 10	65.9 - 9	70.6 - 8	75.2 - 7		
22	66.3 - 11	72.5 - 10	77.8 - 9	83.0 - 8		
23	73.4 - 11	80.2 - 10	86.2 - 9	92.3 - 8		
24	80.5 - 12	87.8 - 11	94.7 - 10	101.6 - 9		
25	88.0 - 13	96.1 - 12	103.6 - 10	111.2 - 9		
26	95.4 - 13	104.4 - 12	112.6 - 11	120.7 - 10		
27	104.0 - 14	113.6 - 13	122.7 - 12	131.8 - 11		
28	112.5 - 15	122.9 - 13	132.9 - 12	142.9 - 11	152.0 - 10	161.1 - 8"
29	121.2 - 15	132.3 - 14	143.3 - 13	154.3 - 12	164.6 - 10	174.8 - 9
30	130.0 - 16	141.9 - 14	153.8 - 13	165.7 - 12	177.2 - 11	188.6 - 9
31	139.8 - 16	152.8 - 15	165.3 - 14	177.8 - 13	190.3 - 11	202.8 - 10
32	149.6 - 17	163.7 - 16	176.8 - 14	189.9 - 13	203.5 - 12	217.1 - 11
33	160.5 - 18	175.6 - 16	189.8 - 15	203.9 - 14	218.8 - 12	233.6 - 11
34	171.4 - 18	187.6 - 17	202.8 - 16	217.9 - 14	234.0 - 13	250.2 - 12
35	182.6 - 19	199.8 - 18	216.0 - 16	232.3 - 15	249.1 - 14	265.9 - 12
36	193.8 - 20	212.1 - 18	229.4 - 17	246.7 - 16	264.2 - 14	281.6 - 13
37	206.4 - 20	225.8 - 19	244.6 - 17	263.4 - 16	281.9 - 15	300.4 - 13
38	219.0 - 21	239.6 - 19	259.8 - 18	280.0 - 17	299.6 - 15	319.1 - 14
39	231.2 - 22	253.1 - 20	274.0 - 19	294.9 - 17	315.6 - 16	336.4 - 14
40	243.2 - 22	266.6 - 21	288.2 - 19	309.8 - 18	331.8 - 16	353.7 - 15

Table 10.--Gross volume (cubic feet, inside bark)
Form Class 73 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.2	1.5	1.8	2.0	2.3	2.6
6	1.6	2.1	2.4	2.8	3.1	3.5
7	2.2	2.8	3.2	3.6	4.1	4.5
8	2.8	3.6	4.1	4.6	5.2	5.7
9	3.5	4.5	5.1	5.8	6.4	7.0
10	4.2	5.4	6.1	6.9	7.6	8.3

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	5.4 - 7"	7.3 - 7"	9.2 - 6"		
11	6.6 - 8	9.0 - 7	11.4 - 7		
12	7.9 - 9	10.7 - 8	13.5 - 7	15.6 - 7"	17.8 - 6
13	9.2 - 9	12.6 - 9	15.9 - 8	18.4 - 7	21.0 - 7
14	10.6 - 10	14.4 - 9	18.3 - 8	21.2 - 8	24.2 - 7
15	12.2 - 11	16.7 - 10	21.2 - 9	24.7 - 8	28.2 - 8
16	13.9 - 12	19.0 - 11	24.1 - 10	28.1 - 9	32.1 - 8
17	15.6 - 12	21.4 - 11	27.2 - 10	31.7 - 10	36.2 - 9
18	17.3 - 13	23.8 - 12	30.2 - 11	35.3 - 10	40.4 - 10
19	19.6 - 14	26.8 - 13	34.0 - 12	39.8 - 11	45.6 - 10
20	21.8 - 15	29.8 - 14	37.9 - 12	44.4 - 12	50.9 - 11
21	24.2 - 15	33.2 - 14	42.2 - 13	49.4 - 12	56.7 - 12
22	26.7 - 16	36.6 - 15	46.4 - 14	54.4 - 13	62.5 - 12
23	29.2 - 17	40.0 - 16	50.8 - 15	59.7 - 14	68.6 - 13
24	31.8 - 17	43.5 - 16	55.2 - 15	64.9 - 14	74.6 - 13
25	35.0 - 18	47.8 - 17	60.6 - 16	71.2 - 15	81.8 - 14
26	38.1 - 19	52.0 - 18	65.9 - 17	77.4 - 16	88.9 - 15
27	41.4 - 20	56.4 - 18	71.3 - 17	83.8 - 16	96.4 - 15
28	44.6 - 20	60.6 - 19	76.7 - 18	90.2 - 17	103.8 - 16
29	48.5 - 21	65.8 - 20	83.2 - 19	97.8 - 18	112.4 - 17
30	52.4 - 22	71.0 - 21	89.6 - 19	105.2 - 18	120.9 - 17
31	56.6 - 23	76.6 - 21	96.5 - 20	113.4 - 19	130.4 - 18
32	60.8 - 23	82.1 - 22	103.4 - 21	121.6 - 20	139.9 - 19
33	65.1 - 24	87.8 - 23	110.4 - 21	129.8 - 20	149.3 - 19
34	69.4 - 25	93.4 - 23	117.4 - 22	138.0 - 21	158.7 - 20
35	74.2 - 26	99.8 - 24	125.4 - 23	147.5 - 22	169.6 - 21
36	79.1 - 26	106.2 - 25	133.4 - 23	156.9 - 22	180.4 - 21
37	83.7 - 27	112.4 - 26	141.0 - 24	166.0 - 23	191.0 - 22
38	88.3 - 28	118.4 - 26	148.6 - 25	175.1 - 24	201.6 - 23
39	93.4 - 28	125.3 - 27	157.2 - 26	185.2 - 25	213.2 - 23
40	98.5 - 29	132.2 - 28	165.9 - 26	195.4 - 25	224.9 - 24

Table 10.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	2.8	3.1	3.4	3.6	3.9	4.2	4.4
6	3.8	4.2	4.5	4.9	5.2	5.6	5.9
7	4.9	5.3	5.8	6.2	6.6	7.0	7.5
8	6.2	6.7	7.3	7.8	8.3	8.8	9.4
9	7.7	8.3	9.0	9.6	10.2	10.9	11.5
10	9.1	9.8	10.5	11.3	12.0	12.7	13.5

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12						
13						
14	26.3 - 6"	28.4 - 5"				
15	30.8 - 7	33.4 - 6				
16	35.2 - 8	38.4 - 7				
17	39.8 - 8	43.4 - 7				
18	44.4 - 9	48.5 - 8				
19	50.2 - 9	54.8 - 8				
20	56.0 - 10	61.2 - 9	65.4 - 8"	69.6 - 7"		
21	62.6 - 11	68.4 - 10	73.2 - 8	78.0 - 7		
22	69.0 - 11	75.5 - 10	81.0 - 9	86.5 - 8		
23	75.6 - 12	82.6 - 11	88.9 - 10	95.2 - 9		
24	82.1 - 12	89.6 - 11	96.7 - 10	103.8 - 9		
25	90.2 - 13	98.6 - 12	106.4 - 11	114.2 - 10		
26	98.2 - 14	107.5 - 12	116.1 - 11	124.7 - 10		
27	106.4 - 14	116.4 - 13	125.8 - 12	135.2 - 11		
28	114.5 - 15	125.2 - 14	135.4 - 12	145.6 - 11	155.0 - 10"	164.3 - 8"
29	123.9 - 15	135.4 - 14	146.7 - 13	158.0 - 12	168.6 - 11	179.2 - 9
30	133.3 - 16	145.7 - 15	158.0 - 14	170.4 - 12	182.2 - 11	194.1 - 10
31	144.0 - 17	157.5 - 15	170.6 - 14	183.6 - 13	196.6 - 12	209.6 - 10
32	154.6 - 17	169.3 - 16	183.0 - 15	196.7 - 13	210.8 - 12	225.0 - 11
33	165.0 - 18	180.6 - 17	195.3 - 15	210.0 - 14	225.4 - 13	240.8 - 12
34	175.4 - 19	192.0 - 17	207.6 - 16	223.3 - 15	239.9 - 13	256.5 - 12
35	187.4 - 19	205.2 - 18	222.0 - 16	238.8 - 16	256.2 - 14	273.6 - 13
36	199.4 - 20	218.5 - 18	236.4 - 17	254.4 - 16	272.6 - 15	290.7 - 13
37	211.1 - 21	231.2 - 19	250.6 - 18	270.0 - 17	289.1 - 15	308.2 - 14
38	222.8 - 21	243.9 - 20	264.7 - 18	285.5 - 17	305.6 - 16	325.6 - 14
39	235.9 - 22	258.6 - 20	280.2 - 19	301.7 - 18	323.0 - 16	344.4 - 15
40	249.0 - 23	273.2 - 21	295.6 - 20	317.9 - 18	340.6 - 17	363.3 - 15

Table 11.--Gross volume (cubic feet, inside bark)
Form Class 74 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.2	1.5	1.8	2.0	2.3	2.6
6	1.6	2.1	2.4	2.8	3.1	3.5
7	2.2	2.8	3.2	3.7	4.1	4.6
8	2.8	3.6	4.1	4.7	5.2	5.8
9	3.5	4.5	5.1	5.8	6.4	7.0
10	4.2	5.4	6.2	6.9	7.7	8.4

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	5.4 - 7"	7.4 - 7"	9.4 - 6"		
11	6.6 - 8	9.1 - 7	11.6 - 7		
12	7.9 - 9	10.8 - 8	13.7 - 7	15.8 - 6	18.0 - 6
13	9.4 - 10	12.8 - 9	16.2 - 8	18.8 - 7	21.5 - 7
14	10.8 - 10	14.8 - 10	18.8 - 9	21.9 - 8	25.0 - 7
15	12.4 - 11	17.0 - 10	21.6 - 9	25.2 - 9	28.8 - 8
16	13.9 - 12	19.1 - 11	24.3 - 10	28.4 - 9	32.5 - 9
17	15.8 - 13	21.8 - 12	27.7 - 11	32.4 - 10	37.2 - 9
18	17.8 - 13	24.4 - 12	31.1 - 11	36.4 - 11	41.8 - 10
19	20.0 - 14	27.5 - 13	35.0 - 12	41.0 - 11	47.0 - 11
20	22.3 - 15	30.6 - 14	38.9 - 13	45.6 - 12	52.3 - 11
21	24.8 - 16	34.0 - 14	43.2 - 13	50.7 - 13	58.2 - 12
22	27.3 - 16	37.4 - 15	47.6 - 14	55.8 - 13	64.1 - 12
23	30.0 - 17	41.2 - 16	52.4 - 15	61.6 - 14	70.7 - 13
24	32.8 - 18	45.0 - 17	57.1 - 15	67.2 - 15	77.3 - 14
25	35.6 - 18	48.8 - 17	62.0 - 16	73.0 - 15	83.9 - 14
26	38.5 - 19	52.7 - 18	66.9 - 17	78.7 - 16	90.5 - 15
27	42.0 - 20	57.4 - 19	72.8 - 17	85.6 - 17	98.5 - 16
28	45.4 - 21	62.0 - 19	78.6 - 18	92.6 - 17	106.5 - 16
29	49.1 - 21	67.0 - 20	84.8 - 19	99.9 - 18	115.0 - 17
30	52.8 - 22	72.0 - 21	91.1 - 20	107.2 - 19	123.4 - 18
31	57.0 - 23	77.6 - 22	98.1 - 20	115.6 - 19	133.0 - 18
32	61.3 - 24	83.2 - 22	105.1 - 21	123.9 - 20	142.7 - 19
33	65.8 - 24	89.2 - 23	112.6 - 22	132.7 - 21	152.8 - 20
34	70.4 - 25	95.2 - 24	120.0 - 22	141.4 - 21	162.8 - 20
35	75.0 - 26	101.3 - 24	127.6 - 23	150.4 - 22	173.1 - 21
36	79.6 - 27	107.4 - 25	135.2 - 24	159.3 - 23	183.4 - 22
37	84.5 - 27	114.0 - 26	143.4 - 24	169.1 - 23	194.8 - 22
38	89.4 - 28	120.5 - 27	151.6 - 25	179.0 - 24	206.3 - 23
39	94.6 - 29	127.4 - 27	160.3 - 26	189.2 - 25	218.1 - 24
40	99.7 - 30	134.4 - 28	169.0 - 27	199.4 - 26	229.9 - 25

Table 11.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	2.8	3.1	3.4	3.6	3.9	4.2	4.4
6	3.8	4.2	4.5	4.9	5.2	5.6	5.9
7	5.0	5.4	5.9	6.3	6.8	7.2	7.6
8	6.3	6.9	7.4	8.0	8.5	9.0	9.6
9	7.7	8.3	9.0	9.6	10.2	10.9	11.5
10	9.2	10.0	10.7	11.5	12.2	13.0	13.8

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12						
13						
14	27.2 - 7"	29.5 - 6"				
15	31.5 - 7	34.2 - 6				
16	35.7 - 8	38.9 - 7				
17	40.9 - 8	44.6 - 7				
18	46.0 - 9	50.2 - 8				
19	51.8 - 10	56.6 - 9				
20	57.6 - 10	63.0 - 9	67.4 - 8"	71.7 - 7"		
21	64.2 - 11	70.2 - 10	75.2 - 8	80.3 - 8		
22	70.8 - 11	77.5 - 10	83.2 - 9	88.9 - 8		
23	78.0 - 12	85.2 - 11	91.8 - 10	98.4 - 9		
24	85.1 - 13	92.9 - 11	100.4 - 10	107.8 - 9		
25	92.6 - 13	101.3 - 12	109.4 - 11	117.6 - 10		
26	100.1 - 14	109.7 - 13	118.5 - 12	127.3 - 10		
27	108.8 - 14	119.2 - 13	128.9 - 12	138.6 - 11		
28	117.6 - 15	128.7 - 14	139.3 - 13	149.9 - 12	159.6 - 10"	169.3 - 9"
29	127.0 - 16	138.9 - 14	150.6 - 13	162.2 - 12	173.2 - 11	184.2 - 9
30	136.2 - 16	149.1 - 15	161.8 - 14	174.6 - 13	186.9 - 11	199.2 - 10
31	147.0 - 17	161.0 - 16	174.5 - 14	188.0 - 13	201.4 - 12	214.8 - 11
32	157.8 - 18	173.0 - 16	187.2 - 15	201.3 - 14	215.9 - 13	230.5 - 11
33	169.0 - 18	185.2 - 17	200.4 - 16	215.7 - 14	231.6 - 13	247.6 - 12
34	180.2 - 19	197.5 - 18	213.8 - 16	230.1 - 15	247.4 - 14	264.7 - 13
35	191.6 - 20	210.0 - 18	227.4 - 17	244.8 - 16	262.8 - 14	280.8 - 13
36	203.0 - 20	222.6 - 19	241.1 - 17	259.6 - 16	278.2 - 15	296.9 - 14
37	215.6 - 21	236.4 - 19	256.4 - 18	276.4 - 17	296.1 - 16	315.8 - 14
38	228.2 - 22	250.2 - 20	271.7 - 19	293.2 - 18	314.0 - 16	334.8 - 15
39	241.6 - 22	265.0 - 21	287.3 - 20	309.6 - 18	331.8 - 17	354.0 - 15
40	254.8 - 23	279.8 - 22	303.0 - 20	326.1 - 19	349.6 - 17	373.1 - 16

Table 12.--Gross volume (cubic feet, inside bark)
Form Class 75 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.3	1.6	1.9	2.1	2.4	2.7
6	1.7	2.2	2.5	2.9	3.2	3.6
7	2.2	2.8	3.3	3.7	4.2	4.6
8	2.9	3.7	4.3	4.8	5.4	6.0
9	3.6	4.7	5.4	6.1	6.8	7.4
10	4.3	5.6	6.4	7.2	8.0	8.7

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	5.6 - 7	7.6 - 7"	9.7 - 6		
11	6.8 - 8	9.3 - 7	11.8 - 7		
12	8.0 - 9	11.0 - 8	13.9 - 7	16.2 - 7"	18.4 - 6
13	9.4 - 10	13.0 - 9	16.5 - 8	19.2 - 7	21.9 - 7
14	10.9 - 10	15.0 - 10	19.1 - 9	22.2 - 8	25.4 - 7
15	12.6 - 11	17.3 - 10	22.0 - 9	25.8 - 9	29.5 - 8
16	14.3 - 12	19.6 - 11	25.0 - 10	29.3 - 9	33.6 - 9
17	16.2 - 13	22.3 - 12	28.4 - 11	33.3 - 10	38.2 - 9
18	18.1 - 13	25.0 - 12	31.8 - 11	37.4 - 11	42.9 - 10
19	20.4 - 14	28.1 - 13	35.8 - 12	42.0 - 11	48.2 - 11
20	22.6 - 15	31.2 - 14	39.7 - 13	46.6 - 12	53.5 - 11
21	25.1 - 16	34.6 - 15	44.0 - 14	51.7 - 13	59.4 - 12
22	27.6 - 16	38.0 - 15	48.4 - 14	56.9 - 13	65.4 - 13
23	30.4 - 17	41.8 - 16	53.2 - 15	62.6 - 14	72.1 - 13
24	33.2 - 18	45.6 - 17	58.1 - 16	68.4 - 15	78.8 - 14
25	36.2 - 19	49.8 - 18	63.4 - 16	74.6 - 15	85.9 - 15
26	39.2 - 19	53.9 - 18	68.6 - 17	80.8 - 16	93.0 - 15
27	42.7 - 20	58.6 - 19	74.5 - 18	87.8 - 17	101.2 - 16
28	46.2 - 21	63.3 - 20	80.4 - 18	94.8 - 18	109.3 - 17
29	50.0 - 22	68.4 - 20	86.8 - 19	102.3 - 18	117.8 - 17
30	53.7 - 22	73.4 - 21	93.1 - 20	109.8 - 19	126.4 - 18
31	58.0 - 23	79.0 - 22	100.1 - 21	118.1 - 20	136.1 - 19
32	62.2 - 24	84.6 - 23	107.1 - 21	126.4 - 20	145.8 - 19
33	66.8 - 25	90.8 - 23	114.7 - 22	135.4 - 21	156.0 - 20
34	71.4 - 26	96.8 - 24	122.3 - 23	144.2 - 22	166.2 - 21
35	76.0 - 26	103.1 - 25	130.2 - 23	153.6 - 22	177.0 - 21
36	80.6 - 27	109.3 - 26	138.0 - 24	162.9 - 23	187.8 - 22
37	85.6 - 28	115.9 - 26	146.2 - 25	172.8 - 24	199.4 - 23
38	90.5 - 28	122.5 - 27	154.5 - 26	182.8 - 25	211.1 - 24
39	95.7 - 29	129.6 - 28	163.4 - 26	193.2 - 25	223.0 - 24
40	100.9 - 30	136.6 - 29	172.2 - 27	203.6 - 26	234.9 - 25

Table 12.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	2.9	3.2	3.5	3.7	4.0	4.3	4.5
6	3.9	4.3	4.6	5.0	5.3	5.7	6.0
7	5.1	5.6	6.0	6.5	6.9	7.4	7.9
8	6.5	7.1	7.7	8.2	8.8	9.4	9.9
9	8.1	8.8	9.5	10.2	10.9	11.5	12.2
10	9.5	10.3	11.1	11.9	12.7	13.4	14.2

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12						
13						
14	27.7 - 7"	30.0 - 6"				
15	32.4 - 7	35.2 - 6				
16	37.0 - 8	40.3 - 7				
17	42.1 - 9	46.0 - 8				
18	47.3 - 9	51.7 - 8				
19	53.2 - 10	58.2 - 9				
20	59.0 - 10	64.6 - 9	69.1 - 8"	73.6 - 7"		
21	65.7 - 11	72.0 - 10	77.2 - 9	82.4 - 8		
22	72.4 - 12	79.3 - 11	85.2 - 10	91.1 - 8		
23	79.6 - 12	87.1 - 11	93.9 - 10	100.7 - 9		
24	86.8 - 13	94.9 - 12	102.6 - 11	110.3 - 10		
25	94.9 - 13	103.9 - 12	112.4 - 11	120.8 - 10		
26	103.0 - 14	112.9 - 13	122.1 - 12	131.3 - 11		
27	111.9 - 15	122.6 - 14	132.7 - 12	142.8 - 11		
28	120.8 - 15	132.3 - 14	143.3 - 13	154.3 - 12	164.4 - 10	174.5 - 9"
29	130.2 - 16	142.6 - 15	154.7 - 14	166.8 - 13	178.2 - 11	189.6 - 10
30	139.7 - 17	153.0 - 15	166.2 - 14	179.4 - 13	192.1 - 12	204.8 - 10
31	150.6 - 17	165.0 - 16	179.0 - 15	192.9 - 14	206.8 - 12	220.7 - 11
32	161.4 - 18	177.1 - 17	191.8 - 15	206.4 - 14	221.5 - 13	236.6 - 12
33	172.8 - 19	189.6 - 17	205.3 - 16	221.0 - 15	237.4 - 13	253.8 - 12
34	184.1 - 19	202.0 - 18	218.8 - 17	235.6 - 15	253.4 - 14	271.1 - 13
35	196.1 - 20	215.2 - 19	233.2 - 17	251.2 - 16	269.8 - 15	288.4 - 13
36	208.2 - 21	228.5 - 19	247.7 - 18	266.9 - 17	286.2 - 15	305.6 - 14
37	221.0 - 21	242.5 - 20	263.2 - 19	284.0 - 17	304.4 - 16	324.9 - 15
38	233.8 - 22	256.5 - 21	278.8 - 19	301.0 - 18	322.6 - 17	344.2 - 15
39	247.2 - 23	271.5 - 21	294.6 - 20	317.7 - 19	340.6 - 17	363.6 - 16
40	260.7 - 23	286.5 - 22	310.4 - 21	334.4 - 19	358.7 - 18	383.0 - 16

Table 13.--Gross volume (cubic feet, inside bark)
Form Class 76 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.3	1.6	1.9	2.2	2.5	2.7
6	1.8	2.3	2.7	3.0	3.4	3.8
7	2.3	2.9	3.4	3.8	4.3	4.7
8	3.0	3.8	4.4	5.0	5.6	6.2
9	3.6	4.7	5.4	6.1	6.8	7.4
10	4.4	5.7	6.5	7.3	8.1	8.9

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	5.7 - 8	7.8 - 7"	9.9 - 6"	11.4 - 6	12.9 - 5
11	7.0 - 8	9.6 - 8	12.1 - 7	14.0 - 6	15.9 - 6
12	8.2 - 9	11.2 - 8	14.3 - 7	16.6 - 7	18.9 - 6
13	9.6 - 10	13.2 - 9	16.9 - 8	19.6 - 8	22.4 - 7
14	11.1 - 11	15.3 - 10	19.5 - 9	22.7 - 8	25.9 - 8
15	13.0 - 11	17.8 - 10	22.7 - 10	26.6 - 9	30.4 - 8
16	14.8 - 12	20.4 - 11	25.9 - 10	30.4 - 10	34.8 - 9
17	16.7 - 13	23.0 - 12	29.4 - 11	34.4 - 10	39.5 - 10
18	18.6 - 14	25.7 - 13	32.8 - 12	38.5 - 11	44.2 - 10
19	20.9 - 14	28.8 - 13	36.8 - 12	43.2 - 12	49.6 - 11
20	23.2 - 15	32.0 - 14	40.8 - 13	48.0 - 12	55.1 - 12
21	25.8 - 16	35.5 - 15	45.2 - 14	53.2 - 13	61.1 - 12
22	28.3 - 17	39.0 - 16	49.6 - 14	58.4 - 14	67.1 - 13
23	31.1 - 17	42.8 - 16	54.5 - 15	64.2 - 14	73.8 - 14
24	33.9 - 18	46.6 - 17	59.4 - 16	70.0 - 15	80.6 - 14
25	37.1 - 19	51.0 - 18	65.0 - 17	76.6 - 16	88.3 - 15
26	40.3 - 20	55.4 - 19	70.6 - 17	83.3 - 16	96.0 - 16
27	43.8 - 21	60.2 - 19	76.6 - 18	90.4 - 17	104.2 - 16
28	47.4 - 21	65.0 - 20	82.6 - 19	97.6 - 18	112.5 - 17
29	51.2 - 22	70.1 - 21	89.0 - 20	105.1 - 19	121.2 - 18
30	55.0 - 23	75.2 - 21	95.5 - 20	112.7 - 19	129.9 - 18
31	59.1 - 24	80.8 - 22	102.4 - 21	121.0 - 20	139.5 - 19
32	63.2 - 24	86.2 - 23	109.3 - 22	129.2 - 21	149.1 - 20
33	67.6 - 25	92.1 - 24	116.6 - 22	137.9 - 21	159.2 - 20
34	71.9 - 26	98.0 - 24	124.0 - 23	146.6 - 22	169.2 - 21
35	76.8 - 27	104.6 - 25	132.4 - 24	156.6 - 23	180.8 - 22
36	81.7 - 27	111.3 - 26	140.9 - 25	166.6 - 24	192.4 - 22
37	86.6 - 28	117.9 - 27	149.2 - 25	176.6 - 24	204.1 - 23
38	91.6 - 29	124.6 - 27	157.5 - 26	186.6 - 25	215.8 - 24
39	96.8 - 30	131.6 - 28	166.4 - 27	197.2 - 26	227.9 - 25
40	102.1 - 30	138.8 - 29	175.4 - 27	207.7 - 26	240.0 - 25

Table 13.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	3.0	3.3	3.6	3.9	4.2	4.4	4.7
6	4.1	4.5	4.9	5.2	5.6	6.0	6.3
7	5.2	5.7	6.1	6.6	7.0	7.5	8.0
8	6.7	7.3	7.9	8.5	9.1	9.7	10.3
9	8.1	8.8	9.5	10.2	10.9	11.5	12.2
10	9.8	10.6	11.4	12.2	13.0	13.8	14.6

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12						
13						
14	28.3 - 7"	30.7 - 6				
15	33.4 - 7	36.3 - 7				
16	38.4 - 8	41.9 - 7				
17	43.6 - 9	47.6 - 8				
18	48.8 - 9	53.4 - 8				
19	54.8 - 10	60.0 - 9				
20	60.8 - 11	66.5 - 10	71.2 - 8	75.9 - 7"		
21	67.6 - 11	74.0 - 10	79.4 - 9	84.8 - 8		
22	74.2 - 12	81.4 - 11	87.5 - 10	93.6 - 9		
23	81.6 - 12	89.3 - 11	96.3 - 10	103.3 - 9		
24	88.9 - 13	97.2 - 12	105.1 - 11	113.0 - 10		
25	97.6 - 14	107.0 - 13	115.7 - 11	124.4 - 10		
26	106.4 - 14	116.7 - 13	126.2 - 12	135.8 - 11		
27	115.4 - 15	126.6 - 14	137.0 - 13	147.5 - 12		
28	124.4 - 16	136.4 - 14	147.8 - 13	159.2 - 12	169.6 - 11	180.1 - 9"
29	134.0 - 16	146.8 - 15	159.4 - 14	172.0 - 13	183.8 - 11	195.5 - 10
30	143.6 - 17	157.3 - 16	171.0 - 14	184.7 - 13	197.8 - 12	210.9 - 11
31	154.4 - 18	169.4 - 16	183.8 - 15	198.2 - 14	212.5 - 13	226.8 - 11
32	165.2 - 18	181.4 - 17	196.5 - 16	211.6 - 14	227.2 - 13	242.7 - 12
33	176.4 - 19	193.7 - 18	209.9 - 16	226.1 - 15	243.0 - 14	260.0 - 13
34	187.6 - 20	206.0 - 18	223.3 - 17	240.6 - 16	258.9 - 14	277.2 - 13
35	200.6 - 20	220.3 - 19	239.0 - 18	257.6 - 16	276.8 - 15	295.9 - 14
36	213.5 - 21	234.6 - 20	254.6 - 18	274.5 - 17	294.6 - 16	314.6 - 14
37	226.4 - 22	248.7 - 20	270.2 - 19	291.8 - 18	313.0 - 16	334.1 - 15
38	239.3 - 22	262.8 - 21	285.9 - 20	309.0 - 18	331.3 - 17	353.6 - 15
39	253.0 - 23	278.0 - 22	302.0 - 20	325.9 - 19	349.6 - 17	373.3 - 16
40	266.6 - 24	293.3 - 22	318.0 - 21	342.8 - 19	367.9 - 18	393.0 - 16

Table 14.--Gross volume (cubic feet, inside bark)
Form Class 77 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.3	1.6	1.9	2.2	2.5	2.7
6	1.8	2.3	2.7	3.0	3.4	3.8
7	2.4	3.0	3.5	4.0	4.4	4.9
8	3.0	3.9	4.5	5.1	5.7	6.3
9	3.7	4.8	5.5	6.3	7.0	7.7
10	4.5	5.9	6.7	7.6	8.4	9.3

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	5.9 - 8"	8.0 - 7"	10.2 - 6"	11.8 - 6"	13.3 - 5"
11	7.2 - 8	9.8 - 8	12.4 - 7	14.4 - 6	16.3 - 6
12	8.4 - 9	11.5 - 8	14.6 - 8	17.0 - 7	19.3 - 6
13	10.0 - 10	13.7 - 9	17.4 - 8	20.3 - 8	23.2 - 7
14	11.5 - 11	15.8 - 10	20.2 - 9	23.6 - 8	27.0 - 8
15	13.2 - 12	18.2 - 11	23.2 - 10	27.2 - 9	31.2 - 8
16	15.0 - 12	20.6 - 11	26.3 - 10	30.8 - 10	35.4 - 9
17	17.0 - 13	23.5 - 12	30.0 - 11	35.2 - 10	40.4 - 10
18	19.1 - 14	26.4 - 13	33.7 - 12	39.6 - 11	45.5 - 10
19	21.3 - 15	29.4 - 14	37.6 - 13	44.2 - 12	50.9 - 11
20	23.5 - 15	32.6 - 14	41.6 - 13	49.0 - 13	56.3 - 12
21	26.0 - 16	36.0 - 15	46.0 - 14	54.2 - 13	62.4 - 12
22	28.6 - 17	39.6 - 16	50.5 - 15	59.5 - 14	68.5 - 13
23	31.6 - 18	43.7 - 17	55.8 - 15	65.8 - 15	75.8 - 14
24	34.6 - 18	47.8 - 17	61.0 - 16	72.0 - 15	83.0 - 14
25	37.6 - 19	52.0 - 18	66.4 - 17	78.4 - 16	90.3 - 15
26	40.7 - 20	56.2 - 19	71.7 - 18	84.6 - 17	97.6 - 16
27	44.4 - 21	61.2 - 20	78.1 - 18	92.2 - 17	106.4 - 16
28	48.2 - 22	66.4 - 20	84.5 - 19	99.9 - 18	115.3 - 17
29	52.0 - 22	71.5 - 21	91.0 - 20	107.6 - 19	124.2 - 18
30	55.9 - 23	76.7 - 22	97.5 - 20	115.2 - 19	133.0 - 18
31	60.0 - 24	82.2 - 22	104.4 - 21	123.6 - 20	142.7 - 19
32	64.1 - 25	87.8 - 23	111.4 - 22	131.9 - 21	152.4 - 20
33	68.8 - 25	94.0 - 24	119.3 - 23	141.2 - 22	163.2 - 21
34	73.4 - 26	100.3 - 25	127.2 - 23	150.6 - 22	174.0 - 21
35	78.1 - 27	106.6 - 26	135.2 - 24	160.1 - 23	185.0 - 22
36	82.8 - 28	113.0 - 26	143.3 - 25	169.7 - 24	196.1 - 23
37	88.0 - 28	120.1 - 27	152.2 - 26	180.4 - 25	208.7 - 24
38	93.3 - 29	127.2 - 28	161.2 - 26	191.2 - 25	221.3 - 24
39	98.3 - 30	134.2 - 29	170.0 - 27	201.6 - 26	233.2 - 25
40	103.3 - 31	141.0 - 29	178.7 - 28	211.9 - 27	245.1 - 26

Table 14.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	3.0	3.3	3.6	3.9	4.2	4.4	4.7
6	4.1	4.5	4.9	5.2	5.6	6.0	6.3
7	5.4	5.9	6.4	6.8	7.3	7.8	8.3
8	7.0	7.6	8.2	8.8	9.4	10.0	10.6
9	8.5	9.2	9.9	10.7	11.4	12.1	12.9
10	10.1	10.9	11.8	12.6	13.5	14.3	15.1

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12						
13						
14	29.5 - 7"	32.0 - 6"				
15	34.2 - 8	37.3 - 7				
16	39.0 - 8	42.6 - 7				
17	44.6 - 9	48.8 - 8				
18	50.3 - 10	55.1 - 9				
19	56.2 - 10	61.6 - 9				
20	62.2 - 11	68.1 - 10	73.0 - 9"	77.9 - 8"		
21	69.0 - 11	75.6 - 10	81.2 - 9	86.8 - 8		
22	75.8 - 12	83.2 - 11	89.5 - 10	95.8 - 9		
23	83.8 - 13	91.8 - 12	99.0 - 11	106.3 - 9		
24	91.7 - 13	100.4 - 12	108.6 - 11	116.8 - 10		
25	100.0 - 14	109.6 - 13	118.6 - 12	127.6 - 11		
26	108.2 - 15	118.9 - 13	128.7 - 12	138.5 - 11		
27	118.0 - 15	129.5 - 14	140.3 - 13	151.1 - 12		
28	127.7 - 16	140.1 - 15	151.9 - 14	163.7 - 13	174.6 - 11"	185.4 - 10"
29	137.4 - 17	150.7 - 15	163.6 - 14	176.6 - 13	188.8 - 12	201.0 - 10
30	147.2 - 17	161.3 - 16	175.4 - 15	189.6 - 14	203.2 - 12	216.7 - 11
31	158.0 - 18	173.4 - 17	188.3 - 15	203.2 - 14	218.0 - 13	232.8 - 12
32	169.0 - 19	185.6 - 17	201.2 - 16	216.9 - 15	232.9 - 13	248.9 - 12
33	181.1 - 19	199.0 - 18	215.8 - 17	232.6 - 15	250.1 - 14	267.6 - 13
34	193.2 - 20	212.3 - 19	230.2 - 17	248.2 - 16	267.2 - 15	286.2 - 14
35	205.4 - 21	225.9 - 19	245.2 - 18	264.4 - 17	284.2 - 15	304.0 - 14
36	217.8 - 21	239.5 - 20	260.0 - 19	280.5 - 17	301.1 - 16	321.7 - 15
37	231.7 - 22	254.7 - 21	276.8 - 19	299.0 - 18	320.9 - 17	342.8 - 15
38	245.6 - 23	269.9 - 21	293.8 - 20	317.6 - 19	340.7 - 17	363.8 - 16
39	259.1 - 24	285.0 - 22	309.7 - 21	334.4 - 19	359.0 - 18	383.5 - 16
40	272.6 - 24	300.2 - 23	325.8 - 21	351.3 - 20	377.2 - 18	403.2 - 17

Table 15.—Gross volume (cubic feet, inside bark)
Form Class 78 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.3	1.7	2.0	2.3	2.6	2.9
6	1.8	2.4	2.8	3.2	3.6	3.9
7	2.4	3.1	3.6	4.1	4.6	5.1
8	3.0	3.9	4.5	5.1	5.7	6.3
9	3.8	4.9	5.6	6.4	7.1	7.8
10	4.6	6.0	6.8	7.7	8.5	9.4

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	6.0 - 8"	8.2 - 7"	10.4 - 6"	12.0 - 6"	13.6 - 5"
11	7.4 - 9	10.1 - 8	12.8 - 7	14.8 - 6	16.9 - 6
12	8.7 - 9	12.0 - 9	15.2 - 8	17.7 - 7	20.2 - 7
13	10.2 - 10	14.0 - 9	17.9 - 8	20.8 - 8	23.8 - 7
14	11.7 - 11	16.2 - 10	20.6 - 9	24.0 - 9	27.5 - 8
15	13.6 - 12	18.7 - 11	23.8 - 10	27.9 - 9	32.0 - 9
16	15.4 - 12	21.2 - 12	27.1 - 11	31.8 - 10	36.6 - 9
17	17.4 - 13	24.0 - 12	30.6 - 11	36.0 - 11	41.4 - 10
18	19.4 - 14	26.8 - 13	34.2 - 12	40.2 - 11	46.3 - 11
19	21.7 - 15	30.0 - 14	38.4 - 13	45.2 - 12	52.0 - 11
20	24.0 - 16	33.3 - 15	42.6 - 13	50.2 - 13	57.8 - 12
21	26.8 - 16	37.1 - 15	47.4 - 14	55.9 - 13	64.4 - 13
22	29.6 - 17	41.0 - 16	52.3 - 15	61.6 - 14	71.0 - 13
23	32.4 - 18	44.8 - 17	57.3 - 16	67.6 - 15	78.0 - 14
24	35.3 - 19	48.8 - 18	62.3 - 16	73.6 - 16	84.9 - 15
25	38.6 - 19	53.4 - 18	68.1 - 17	80.4 - 16	92.8 - 15
26	41.9 - 20	57.9 - 19	73.9 - 18	87.3 - 17	100.7 - 16
27	45.2 - 21	62.5 - 20	79.8 - 19	94.4 - 18	108.9 - 17
28	48.6 - 22	67.1 - 21	85.6 - 19	101.4 - 18	117.1 - 17
29	52.7 - 23	72.6 - 21	92.6 - 20	109.6 - 19	126.6 - 18
30	56.8 - 23	78.2 - 22	99.6 - 21	117.8 - 20	136.1 - 19
31	61.2 - 24	84.1 - 23	107.0 - 22	126.8 - 21	146.5 - 20
32	65.5 - 25	90.0 - 24	114.5 - 22	135.7 - 21	156.9 - 20
33	70.0 - 26	96.0 - 24	122.0 - 23	144.6 - 22	167.2 - 21
34	74.4 - 26	102.0 - 25	129.6 - 24	153.6 - 23	177.5 - 22
35	79.4 - 27	108.8 - 26	138.2 - 24	163.8 - 23	189.4 - 22
36	84.4 - 28	115.6 - 27	146.8 - 25	174.0 - 24	201.3 - 23
37	89.4 - 29	122.4 - 27	155.3 - 26	184.4 - 25	213.4 - 24
38	94.5 - 30	129.2 - 28	163.8 - 27	194.6 - 26	225.4 - 25
39	99.8 - 30	136.5 - 29	173.2 - 27	205.7 - 26	238.2 - 25
40	105.1 - 31	143.8 - 30	182.5 - 28	216.7 - 27	250.9 - 26

Table 15.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	3.2	3.5	3.8	4.1	4.4	4.7	5.0
6	4.3	4.7	5.1	5.5	5.9	6.2	6.6
7	5.6	6.1	6.6	7.1	7.6	8.1	8.6
8	7.0	7.6	8.2	8.8	9.4	10.0	10.6
9	8.6	9.3	10.0	10.8	11.5	12.2	13.0
10	10.2	11.0	11.9	12.7	13.6	14.4	15.2

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12	22.0 - 6"	23.8 - 5"				
13	26.0 - 6	28.2 - 6				
14	30.0 - 7	32.6 - 6				
15	35.2 - 8	38.4 - 7				
16	40.4 - 8	44.1 - 8				
17	45.7 - 9	50.0 - 8				
18	51.2 - 10	56.0 - 9				
19	57.5 - 10	63.0 - 9				
20	63.9 - 11	70.0 - 10	75.0 - 9"	80.1 - 8"		
21	71.3 - 12	78.2 - 11	84.0 - 10	89.9 - 8		
22	78.8 - 12	86.5 - 11	93.1 - 10	99.7 - 9		
23	86.3 - 13	94.6 - 12	102.2 - 11	109.7 - 10		
24	93.8 - 14	102.7 - 12	111.2 - 11	119.7 - 10		
25	102.8 - 14	112.8 - 13	122.1 - 12	131.4 - 11		
26	111.8 - 15	122.8 - 14	133.0 - 13	143.2 - 12		
27	120.8 - 16	132.6 - 14	143.8 - 13	155.0 - 12		
28	129.8 - 16	142.4 - 15	154.6 - 14	166.7 - 13	177.8 - 11	188.8 - 10"
29	140.2 - 17	153.9 - 16	167.2 - 14	180.6 - 13	193.2 - 12	205.7 - 11
30	150.8 - 17	165.4 - 16	180.0 - 15	194.6 - 14	208.6 - 13	222.6 - 11
31	162.5 - 18	178.5 - 17	194.0 - 16	209.4 - 15	224.7 - 13	240.0 - 12
32	174.2 - 19	191.6 - 18	207.8 - 16	224.1 - 15	240.8 - 14	257.4 - 13
33	185.7 - 20	204.2 - 18	221.6 - 17	239.0 - 16	257.1 - 14	275.2 - 13
34	197.2 - 20	216.9 - 19	235.4 - 18	253.9 - 16	273.4 - 15	293.0 - 14
35	210.5 - 21	231.6 - 20	251.4 - 18	271.3 - 17	291.8 - 16	312.2 - 14
36	223.8 - 22	246.2 - 20	267.4 - 19	288.7 - 18	310.1 - 16	331.5 - 15
37	237.0 - 22	260.7 - 21	283.6 - 20	306.4 - 18	329.0 - 17	351.5 - 16
38	250.3 - 23	275.2 - 22	299.6 - 20	324.1 - 19	347.8 - 18	371.5 - 16
39	264.8 - 24	291.4 - 22	316.9 - 21	342.4 - 20	367.6 - 18	392.8 - 17
40	279.3 - 25	307.7 - 23	334.2 - 22	360.6 - 20	387.4 - 19	414.1 - 17

Table 16.--Gross volume (cubic feet, inside bark)
Form Class 79 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.4	1.8	2.1	2.4	2.7	3.0
6	1.8	2.4	2.8	3.2	3.6	3.9
7	2.4	3.1	3.6	4.1	4.6	5.1
8	3.1	4.0	4.6	5.3	5.9	6.5
9	3.9	5.0	5.7	6.5	7.2	7.9
10	4.7	6.2	7.1	7.9	8.8	9.7

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	6.2 - 8	8.5 - 7"	10.8 - 6	12.4 - 6"	14.1 - 5
11	7.6 - 9	10.4 - 8	13.2 - 7	15.3 - 7	17.4 - 6
12	8.9 - 9	12.2 - 9	15.6 - 8	18.2 - 7	20.7 - 7
13	10.5 - 10	14.4 - 9	18.4 - 9	21.5 - 8	24.6 - 7
14	12.1 - 11	16.7 - 10	21.3 - 9	24.9 - 9	28.5 - 8
15	13.9 - 12	19.2 - 11	24.4 - 10	28.6 - 9	32.8 - 9
16	15.7 - 13	21.6 - 12	27.6 - 11	32.4 - 10	37.2 - 9
17	17.8 - 13	24.6 - 12	31.4 - 11	36.9 - 11	42.4 - 10
18	19.9 - 14	27.6 - 13	35.2 - 12	41.4 - 11	47.6 - 11
19	22.2 - 15	30.8 - 14	39.4 - 13	46.4 - 12	53.4 - 11
20	24.6 - 16	34.2 - 15	43.7 - 14	51.5 - 13	59.3 - 12
21	27.4 - 17	38.0 - 15	48.6 - 14	57.3 - 14	66.0 - 13
22	30.2 - 17	41.8 - 16	53.5 - 15	63.1 - 14	72.7 - 14
23	33.2 - 18	46.0 - 17	58.8 - 16	69.5 - 15	80.2 - 14
24	36.3 - 19	50.2 - 18	64.2 - 17	76.0 - 16	87.7 - 15
25	39.4 - 20	54.6 - 19	69.7 - 17	82.4 - 16	95.2 - 16
26	42.6 - 20	58.9 - 19	75.2 - 18	89.0 - 17	102.7 - 16
27	46.2 - 21	63.9 - 20	81.6 - 19	96.6 - 18	111.6 - 17
28	49.8 - 22	68.8 - 21	87.9 - 20	104.2 - 19	120.4 - 18
29	53.7 - 23	74.2 - 22	94.7 - 20	112.2 - 19	129.8 - 18
30	57.6 - 24	79.6 - 22	101.5 - 21	120.3 - 20	139.1 - 19
31	61.8 - 24	85.3 - 23	108.8 - 22	129.1 - 21	149.4 - 20
32	66.0 - 25	91.1 - 24	116.2 - 23	138.0 - 22	159.8 - 21
33	70.7 - 26	97.4 - 25	124.2 - 23	147.6 - 22	170.9 - 21
34	75.4 - 27	103.8 - 25	132.3 - 24	157.2 - 23	182.0 - 22
35	80.2 - 28	110.4 - 26	140.5 - 25	166.9 - 24	193.3 - 23
36	84.9 - 28	116.8 - 27	148.7 - 26	176.6 - 25	204.6 - 23
37	90.2 - 29	124.0 - 28	157.8 - 26	187.6 - 25	217.4 - 24
38	95.6 - 30	131.2 - 29	166.9 - 27	198.6 - 26	230.3 - 25
39	101.0 - 31	138.7 - 29	176.4 - 28	209.8 - 27	243.2 - 26
40	106.3 - 32	146.0 - 30	185.8 - 29	221.0 - 28	256.2 - 27

Table 16.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	3.3	3.6	3.9	4.2	4.5	4.8	5.1
6	4.3	4.7	5.1	5.5	5.9	6.2	6.6
7	5.6	6.1	6.6	7.1	7.6	8.1	8.6
8	7.2	7.8	8.5	9.1	9.7	10.4	11.0
9	8.7	9.4	10.1	10.9	11.6	12.3	13.1
10	10.5	11.4	12.2	13.1	14.0	14.8	15.7

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12	22.6 - 6"	24.4 - 5"				
13	26.9 - 7	29.2 - 6				
14	31.2 - 7	34.0 - 6				
15	36.1 - 8	39.4 - 7				
16	41.0 - 9	44.9 - 8				
17	46.8 - 9	51.3 - 8				
18	52.6 - 10	57.7 - 9				
19	59.1 - 11	64.8 - 10				
20	65.6 - 11	72.0 - 10	77.2 - 9"	82.5 - 8"		
21	73.2 - 12	80.3 - 11	86.4 - 10	92.4 - 9		
22	80.6 - 13	88.6 - 11	95.4 - 10	102.3 - 9		
23	88.8 - 13	97.4 - 12	105.2 - 11	113.1 - 10		
24	97.0 - 14	106.2 - 13	115.0 - 12	123.9 - 11		
25	105.5 - 14	115.8 - 13	125.4 - 12	135.0 - 11		
26	114.0 - 15	125.3 - 14	135.8 - 13	146.2 - 12		
27	123.8 - 16	136.0 - 15	147.5 - 13	159.0 - 12		
28	133.5 - 16	146.6 - 15	159.2 - 14	171.7 - 13	183.2 - 12	194.7 - 10"
29	143.9 - 17	158.0 - 16	171.8 - 15	185.6 - 14	198.6 - 12	211.6 - 11
30	154.2 - 18	169.4 - 16	184.4 - 15	199.5 - 14	214.0 - 13	228.4 - 12
31	165.9 - 18	182.4 - 17	198.3 - 16	214.2 - 15	230.0 - 14	245.9 - 12
32	177.6 - 19	195.5 - 18	212.2 - 17	229.0 - 15	246.2 - 14	263.4 - 13
33	190.0 - 20	209.2 - 19	227.2 - 17	245.1 - 16	263.8 - 15	282.6 - 14
34	202.4 - 21	222.8 - 19	242.0 - 18	261.2 - 17	281.4 - 15	301.7 - 14
35	215.0 - 21	236.7 - 20	257.2 - 19	277.8 - 17	298.8 - 16	319.9 - 15
36	227.6 - 22	250.6 - 21	272.4 - 19	294.3 - 18	316.2 - 17	338.1 - 15
37	241.8 - 23	266.2 - 21	289.8 - 20	313.4 - 19	336.6 - 17	359.8 - 16
38	256.0 - 24	281.8 - 22	307.1 - 21	332.4 - 19	356.9 - 18	381.4 - 17
39	270.8 - 24	298.3 - 23	324.6 - 21	350.8 - 20	376.9 - 19	403.0 - 17
40	285.5 - 25	314.8 - 24	342.0 - 22	369.3 - 21	396.9 - 19	424.5 - 18

Table 17.--Gross volume (cubic feet, inside bark)
Form Class 80 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.4	1.8	2.1	2.4	2.7	3.1
6	1.9	2.4	2.8	3.2	3.6	4.0
7	2.5	3.2	3.7	4.2	4.7	5.2
8	3.2	4.2	4.8	5.5	6.1	6.7
9	4.0	5.2	6.0	6.7	7.5	8.2
10	4.8	6.3	7.2	8.1	9.0	9.9

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	6.3 - 8	8.6 - 7"	11.0 - 7	12.7 - 6"	14.4 - 5
11	7.6 - 9	10.5 - 8	13.4 - 7	15.6 - 7	17.7 - 6
12	8.9 - 10	12.3 - 9	15.7 - 8	18.4 - 7	21.0 - 7
13	10.5 - 10	14.6 - 10	18.6 - 9	21.8 - 8	25.0 - 7
14	12.1 - 11	16.8 - 10	21.5 - 9	25.2 - 9	28.9 - 8
15	14.0 - 12	19.4 - 11	24.8 - 10	29.2 - 10	33.6 - 9
16	15.9 - 13	22.0 - 12	28.2 - 11	33.2 - 10	38.2 - 10
17	18.0 - 14	25.0 - 13	32.1 - 12	37.8 - 11	43.5 - 10
18	20.2 - 14	28.1 - 13	36.0 - 12	42.4 - 12	48.8 - 11
19	22.7 - 15	31.6 - 14	40.4 - 13	47.6 - 12	54.8 - 12
20	25.2 - 16	35.0 - 15	44.8 - 14	52.8 - 13	60.9 - 12
21	28.0 - 17	38.9 - 16	49.8 - 15	58.7 - 14	67.6 - 13
22	30.8 - 18	42.8 - 16	54.7 - 15	64.6 - 15	74.4 - 14
23	33.9 - 18	47.0 - 17	60.2 - 16	71.1 - 15	82.0 - 14
24	37.0 - 19	51.3 - 18	65.6 - 17	77.6 - 16	89.6 - 15
25	40.4 - 20	56.0 - 19	71.6 - 18	84.7 - 17	97.8 - 16
26	43.8 - 21	60.6 - 20	77.5 - 18	91.7 - 17	105.9 - 17
27	47.4 - 22	65.6 - 20	83.9 - 19	99.4 - 18	114.8 - 17
28	51.1 - 22	70.7 - 21	90.3 - 20	107.0 - 19	123.8 - 18
29	55.0 - 23	76.1 - 22	97.2 - 21	115.2 - 20	133.3 - 19
30	59.0 - 24	81.6 - 23	104.1 - 21	123.4 - 20	142.8 - 19
31	63.2 - 25	87.4 - 23	111.5 - 22	132.4 - 21	153.2 - 20
32	67.4 - 26	93.2 - 24	118.9 - 23	141.3 - 22	163.7 - 21
33	72.0 - 26	99.4 - 25	126.8 - 24	150.8 - 23	174.7 - 22
34	76.5 - 27	105.6 - 26	134.8 - 24	160.2 - 23	185.7 - 22
35	81.6 - 28	112.6 - 27	143.6 - 25	170.7 - 24	197.8 - 23
36	86.6 - 29	119.4 - 27	152.3 - 26	181.1 - 25	209.9 - 24
37	91.7 - 30	126.4 - 28	161.2 - 27	191.9 - 26	222.6 - 25
38	96.8 - 30	133.4 - 29	170.1 - 27	202.8 - 26	235.4 - 25
39	102.2 - 31	140.9 - 30	179.6 - 28	214.0 - 27	248.4 - 26
40	107.5 - 32	148.3 - 31	189.1 - 29	225.3 - 28	261.5 - 27

Table 17.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	3.4	3.7	4.0	4.3	4.6	5.0	5.3
6	4.4	4.8	5.2	5.6	6.0	6.4	6.8
7	5.7	6.2	6.7	7.2	7.7	8.2	8.7
8	7.4	8.0	8.7	9.3	9.9	10.6	11.2
9	9.0	9.8	10.5	11.3	12.0	12.8	13.6
10	10.8	11.7	12.5	13.4	14.3	15.2	16.1

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12	22.9 - 6"	24.8 - 5"				
13	27.3 - 7	29.6 - 6				
14	31.6 - 7	34.4 - 6				
15	37.0 - 8	40.3 - 7				
16	42.2 - 9	46.2 - 8				
17	48.2 - 9	52.8 - 9				
18	54.0 - 10	59.3 - 9				
19	60.7 - 11	66.6 - 10				
20	67.4 - 11	74.0 - 10	79.4 - 9"	84.9 - 8"		
21	75.0 - 12	82.4 - 11	88.6 - 10	94.8 - 9		
22	82.6 - 13	90.8 - 12	97.8 - 11	104.8 - 10		
23	90.9 - 13	99.8 - 12	107.8 - 11	115.8 - 10		
24	99.2 - 14	108.7 - 13	117.8 - 12	126.8 - 11		
25	108.4 - 15	119.0 - 14	129.0 - 12	138.9 - 11		
26	117.6 - 15	129.3 - 14	140.2 - 13	151.0 - 12		
27	127.4 - 16	140.1 - 15	152.0 - 14	164.0 - 13		
28	137.4 - 17	150.9 - 16	163.9 - 14	176.9 - 13	188.8 - 12"	200.7 - 10"
29	147.8 - 17	162.4 - 16	176.7 - 15	191.0 - 14	204.4 - 13	217.8 - 11
30	158.4 - 18	174.0 - 17	189.6 - 16	205.2 - 15	220.1 - 13	235.0 - 12
31	170.2 - 19	187.2 - 18	203.6 - 16	220.0 - 15	236.3 - 14	252.6 - 13
32	182.0 - 20	200.4 - 18	217.6 - 17	234.9 - 16	252.6 - 14	270.3 - 13
33	194.4 - 20	214.0 - 19	232.5 - 18	251.0 - 16	270.3 - 15	289.6 - 14
34	206.6 - 21	227.6 - 20	247.4 - 18	267.1 - 17	288.0 - 16	308.8 - 15
35	220.2 - 22	242.6 - 20	263.8 - 19	285.0 - 18	306.8 - 16	328.5 - 15
36	233.8 - 22	257.6 - 21	280.2 - 20	302.8 - 18	325.5 - 17	348.2 - 16
37	247.8 - 23	273.1 - 22	297.4 - 20	321.8 - 19	345.8 - 18	369.8 - 16
38	262.0 - 24	288.6 - 22	314.8 - 21	340.9 - 20	366.2 - 18	391.5 - 17
39	276.8 - 25	305.2 - 23	332.4 - 22	359.6 - 20	386.4 - 19	413.3 - 18
40	291.7 - 25	321.9 - 24	350.0 - 23	378.2 - 21	406.6 - 20	435.1 - 18

Table 18.--Gross volume (cubic feet, inside bark)
Form Class 81 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.4	1.8	2.1	2.4	2.7	3.1
6	1.9	2.4	2.8	3.2	3.6	4.0
7	2.6	3.4	3.9	4.4	5.0	5.5
8	3.3	4.3	5.0	5.6	6.3	6.9
9	4.1	5.3	6.1	6.9	7.7	8.4
10	5.0	6.4	7.3	8.2	9.2	10.1

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	6.4 - 8"	8.8 - 7"	11.2 - 7"	13.0 - 6"	14.7 - 5"
11	7.8 - 9	10.7 - 8	13.6 - 7	15.8 - 7	18.0 - 6
12	9.1 - 10	12.6 - 9	16.1 - 8	18.8 - 7	21.4 - 7
13	10.8 - 10	14.9 - 10	19.0 - 9	22.2 - 8	25.4 - 8
14	12.4 - 11	17.2 - 10	22.0 - 10	25.8 - 9	29.5 - 8
15	14.4 - 12	20.0 - 11	25.6 - 10	30.0 - 10	34.5 - 9
16	16.4 - 13	22.8 - 12	29.2 - 11	34.4 - 10	39.5 - 10
17	18.6 - 14	25.8 - 13	33.0 - 12	38.9 - 11	44.8 - 10
18	20.7 - 15	28.8 - 14	36.9 - 13	43.6 - 12	50.2 - 11
19	23.2 - 15	32.3 - 14	41.4 - 13	48.9 - 13	56.4 - 12
20	25.8 - 16	35.8 - 15	45.9 - 14	54.2 - 13	62.5 - 13
21	28.6 - 17	39.8 - 16	50.9 - 15	60.2 - 14	69.4 - 13
22	31.5 - 18	43.7 - 17	55.9 - 16	66.0 - 15	76.2 - 14
23	34.4 - 19	47.8 - 17	61.2 - 16	72.4 - 16	83.7 - 15
24	37.4 - 19	52.0 - 18	66.6 - 17	78.9 - 16	91.2 - 15
25	41.0 - 20	57.0 - 19	73.0 - 18	86.5 - 17	100.0 - 16
26	44.6 - 21	62.0 - 20	79.3 - 19	94.0 - 18	108.7 - 17
27	48.3 - 22	67.0 - 21	85.8 - 19	101.8 - 18	117.8 - 18
28	52.0 - 23	72.2 - 21	92.3 - 20	109.6 - 19	126.9 - 18
29	56.0 - 23	77.6 - 22	99.2 - 21	117.8 - 20	136.4 - 19
30	59.9 - 24	83.0 - 23	106.2 - 22	126.1 - 21	146.0 - 20
31	64.2 - 25	89.0 - 24	113.7 - 22	135.2 - 21	156.6 - 20
32	68.4 - 26	94.8 - 25	121.2 - 23	144.2 - 22	167.1 - 21
33	73.0 - 27	101.1 - 25	129.2 - 24	153.7 - 23	178.2 - 22
34	77.5 - 27	107.3 - 26	137.1 - 25	163.2 - 24	189.3 - 23
35	82.6 - 28	114.4 - 27	146.2 - 26	174.1 - 25	202.0 - 23
36	87.7 - 29	121.5 - 28	155.3 - 26	185.0 - 25	214.8 - 24
37	93.1 - 30	128.8 - 29	164.6 - 27	196.2 - 26	227.9 - 25
38	98.5 - 31	136.2 - 29	173.9 - 28	207.4 - 27	241.0 - 26
39	104.0 - 32	143.8 - 30	183.6 - 29	219.0 - 28	254.3 - 27
40	109.4 - 32	151.3 - 31	193.2 - 30	230.4 - 28	267.6 - 27

Table 18.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	3.4	3.7	4.0	4.3	4.6	5.0	5.3
6	4.4	4.8	5.2	5.6	6.0	6.4	6.8
7	6.0	6.5	7.1	7.6	8.1	8.6	9.2
8	7.6	8.3	8.9	9.6	10.2	10.9	11.6
9	9.2	10.0	10.8	11.6	12.4	13.1	13.9
10	11.0	11.9	12.8	13.8	14.7	15.6	16.5

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12	23.4 - 6"	25.4 - 5"				
13	27.8 - 7	30.3 - 6				
14	32.4 - 7	35.2 - 7				
15	38.0 - 8	41.6 - 7				
16	43.7 - 9	47.9 - 8				
17	49.6 - 10	54.4 - 9				
18	55.6 - 10	61.0 - 9				
19	62.4 - 11	68.5 - 10				
20	69.2 - 12	76.0 - 11	81.6 - 9"	87.3 - 8"		
21	77.0 - 12	84.6 - 11	91.0 - 10	97.4 - 9		
22	84.6 - 13	93.1 - 12	100.4 - 11	107.6 - 10		
23	92.8 - 14	102.0 - 12	110.2 - 11	118.5 - 10		
24	101.0 - 14	110.8 - 13	120.1 - 12	129.4 - 11		
25	111.0 - 15	121.9 - 14	132.3 - 13	142.4 - 12		
26	120.8 - 16	133.0 - 15	144.2 - 13	155.5 - 12		
27	130.9 - 16	144.0 - 15	156.3 - 14	168.6 - 13		
28	140.9 - 17	154.9 - 16	168.3 - 15	181.7 - 14	194.0 - 12"	206.4 - 11"
29	151.5 - 18	166.6 - 16	181.3 - 15	196.0 - 14	209.9 - 13	223.8 - 11
30	162.2 - 18	178.3 - 17	194.3 - 16	210.3 - 15	225.7 - 14	241.1 - 12
31	174.1 - 19	191.6 - 18	208.5 - 17	225.4 - 15	242.2 - 14	259.0 - 13
32	186.0 - 20	205.0 - 19	222.8 - 17	240.5 - 16	258.7 - 15	276.9 - 14
33	198.4 - 21	218.7 - 19	237.8 - 18	256.8 - 17	276.6 - 15	296.3 - 14
34	210.8 - 21	232.4 - 20	252.7 - 19	273.0 - 17	294.4 - 16	315.7 - 15
35	225.1 - 22	248.2 - 21	270.1 - 19	292.0 - 18	314.4 - 17	336.8 - 16
36	239.4 - 23	264.1 - 21	287.5 - 20	310.9 - 19	334.4 - 17	357.8 - 16
37	254.0 - 24	280.0 - 22	305.2 - 21	330.4 - 20	355.2 - 18	380.0 - 17
38	268.5 - 24	296.0 - 23	323.0 - 22	350.0 - 20	376.1 - 19	402.2 - 17
39	283.6 - 25	312.9 - 24	341.0 - 23	369.0 - 21	396.7 - 19	424.4 - 18
40	298.7 - 26	329.8 - 24	358.8 - 23	387.9 - 21	417.2 - 20	446.5 - 18

Table 19.--Gross volume (cubic feet, inside bark)
Form Class 82 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.4	1.8	2.1	2.5	2.8	3.1
6	1.9	2.4	2.8	3.2	3.7	4.1
7	2.6	3.4	3.9	4.5	5.0	5.6
8	3.4	4.4	5.1	5.8	6.5	7.1
9	4.2	5.4	6.2	7.0	7.8	8.6
10	5.1	6.6	7.6	8.5	9.5	10.4

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	6.6 - 8"	9.1 - 7"	11.6 - 7"	13.4 - 6"	15.2 - 6"
11	8.0 - 9	11.0 - 8	14.0 - 7	16.3 - 7	18.6 - 6
12	9.3 - 10	12.8 - 9	16.4 - 8	19.2 - 8	21.9 - 7
13	11.0 - 11	15.3 - 10	19.6 - 9	22.9 - 8	26.2 - 8
14	12.8 - 11	17.8 - 11	22.8 - 10	26.7 - 9	30.6 - 8
15	14.7 - 12	20.4 - 11	26.2 - 10	30.8 - 10	35.4 - 9
16	16.6 - 13	23.1 - 12	29.6 - 11	34.8 - 11	40.1 - 10
17	18.9 - 14	26.4 - 13	33.8 - 12	39.8 - 11	45.8 - 11
18	21.2 - 15	29.6 - 14	37.9 - 13	44.8 - 12	51.6 - 11
19	23.6 - 16	33.0 - 15	42.4 - 14	50.1 - 13	57.8 - 12
20	26.1 - 16	36.4 - 15	46.8 - 14	55.4 - 14	63.9 - 13
21	28.8 - 17	40.2 - 16	51.6 - 15	61.1 - 14	70.6 - 13
22	31.5 - 18	44.0 - 17	56.5 - 16	66.9 - 15	77.3 - 14
23	34.8 - 19	48.6 - 18	62.4 - 17	74.0 - 16	85.6 - 15
24	38.1 - 20	53.2 - 19	68.2 - 17	81.0 - 17	93.8 - 16
25	41.6 - 20	58.0 - 19	74.3 - 18	88.2 - 17	102.1 - 16
26	45.0 - 21	62.7 - 20	80.4 - 19	95.4 - 18	110.4 - 17
27	48.9 - 22	68.1 - 21	87.3 - 20	103.7 - 19	120.1 - 18
28	52.8 - 23	73.5 - 22	94.2 - 20	112.0 - 20	129.8 - 19
29	56.8 - 24	79.0 - 22	101.2 - 21	120.4 - 20	139.5 - 19
30	60.8 - 25	84.6 - 23	108.3 - 22	128.8 - 21	149.2 - 20
31	65.1 - 25	90.4 - 24	115.8 - 23	137.8 - 22	159.9 - 21
32	69.4 - 26	96.4 - 25	123.4 - 23	147.0 - 22	170.6 - 21
33	74.2 - 27	103.1 - 26	132.0 - 24	157.2 - 23	182.5 - 22
34	79.1 - 28	109.8 - 26	140.6 - 25	167.5 - 24	194.4 - 23
35	84.0 - 29	116.6 - 27	149.2 - 26	177.9 - 25	206.6 - 24
36	88.8 - 29	123.4 - 28	157.9 - 27	188.3 - 26	218.7 - 25
37	94.2 - 30	130.8 - 29	167.5 - 27	200.0 - 26	232.5 - 25
38	99.7 - 31	138.4 - 30	177.1 - 28	211.7 - 27	246.3 - 26
39	105.2 - 32	146.0 - 31	186.8 - 29	223.2 - 28	259.6 - 27
40	110.6 - 33	153.6 - 31	196.6 - 30	234.8 - 29	273.0 - 28

Table 19.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	3.5	3.8	4.1	4.5	4.8	5.1	5.5
6	4.5	4.9	5.4	5.8	6.2	6.6	7.1
7	6.1	6.7	7.2	7.8	8.3	8.8	9.4
8	7.8	8.5	9.2	9.9	10.6	11.2	11.9
9	9.5	10.3	11.1	11.9	12.7	13.5	14.3
10	11.4	12.3	13.3	14.2	15.2	16.1	17.1

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12	24.0 - 6"	26.0 - 5"				
13	28.8 - 7	31.3 - 6				
14	33.6 - 8	36.6 - 7				
15	39.0 - 8	42.6 - 7				
16	44.4 - 9	48.6 - 8				
17	50.8 - 10	55.7 - 9				
18	57.2 - 10	62.8 - 10				
19	64.0 - 11	70.3 - 10				
20	70.8 - 12	77.8 - 11	83.6 - 10"	89.4 - 9"		
21	78.4 - 12	86.2 - 11	92.8 - 10	99.5 - 9		
22	86.0 - 13	94.7 - 12	102.2 - 11	109.6 - 10		
23	95.0 - 14	104.4 - 13	113.0 - 12	121.6 - 11		
24	104.0 - 15	114.1 - 13	123.8 - 12	133.5 - 11		
25	113.4 - 15	124.7 - 14	135.4 - 13	146.0 - 12		
26	122.8 - 16	135.3 - 15	146.8 - 14	158.4 - 13		
27	133.6 - 17	147.0 - 15	159.8 - 14	172.5 - 13		
28	144.3 - 17	158.8 - 16	172.7 - 15	186.6 - 14	199.4 - 12"	212.1 - 11"
29	155.0 - 18	170.6 - 17	185.8 - 16	201.0 - 15	215.4 - 13	229.7 - 12
30	165.8 - 19	182.5 - 17	199.0 - 16	215.5 - 15	231.4 - 14	247.3 - 12
31	178.0 - 19	196.0 - 18	213.4 - 17	230.8 - 16	248.1 - 14	265.4 - 13
32	190.1 - 20	209.6 - 19	227.9 - 18	246.2 - 16	264.9 - 15	283.6 - 14
33	203.4 - 21	224.4 - 20	244.0 - 18	263.7 - 17	284.2 - 16	304.6 - 15
34	216.8 - 22	239.1 - 20	260.2 - 19	281.2 - 18	303.4 - 16	325.5 - 15
35	230.4 - 22	254.2 - 21	276.7 - 20	299.2 - 18	322.3 - 17	345.4 - 16
36	244.0 - 23	269.2 - 22	293.2 - 20	317.2 - 19	341.3 - 18	365.4 - 16
37	259.3 - 24	286.1 - 22	312.0 - 21	338.0 - 20	363.5 - 19	389.0 - 17
38	274.6 - 25	303.0 - 23	330.8 - 22	358.7 - 21	385.6 - 19	412.6 - 18
39	289.8 - 25	320.0 - 24	348.9 - 23	377.8 - 21	406.4 - 20	435.0 - 18
40	305.0 - 26	337.1 - 25	367.0 - 23	397.0 - 22	427.2 - 20	457.4 - 19

Table 20.--Gross volume (cubic feet, inside bark)
Form Class 83 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.4	1.8	2.1	2.5	2.8	3.2
6	2.0	2.5	2.9	3.4	3.8	4.3
7	2.6	3.4	4.0	4.5	5.1	5.7
8	3.4	4.4	5.1	5.8	6.5	7.2
9	4.2	5.4	6.2	7.1	7.9	8.8
10	5.1	6.6	7.6	8.5	9.5	10.4

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	6.6 - 8"	9.2 - 8"	11.7 - 7"	13.6 - 6"	15.4 - 6"
11	8.1 - 9	11.2 - 8	14.4 - 8	16.8 - 7	19.1 - 6
12	9.6 - 10	13.3 - 9	17.0 - 8	19.9 - 8	22.8 - 7
13	11.3 - 11	15.7 - 10	20.1 - 9	23.6 - 9	27.0 - 8
14	13.0 - 12	18.1 - 11	23.2 - 10	27.2 - 9	31.2 - 9
15	15.0 - 12	20.9 - 11	26.8 - 11	31.6 - 10	36.3 - 9
16	17.1 - 13	23.8 - 12	30.5 - 11	36.0 - 11	41.4 - 10
17	19.3 - 14	26.9 - 13	34.5 - 12	40.7 - 11	46.9 - 11
18	21.5 - 15	30.0 - 14	38.5 - 13	45.4 - 12	52.4 - 11
19	24.1 - 16	33.6 - 15	43.2 - 14	51.1 - 13	59.0 - 12
20	26.7 - 17	37.3 - 16	47.9 - 14	56.7 - 14	65.5 - 13
21	29.6 - 17	41.4 - 16	53.2 - 15	63.0 - 15	72.6 - 14
22	32.5 - 18	45.4 - 17	58.4 - 16	69.2 - 15	80.1 - 14
23	35.6 - 19	49.8 - 18	64.0 - 17	76.0 - 16	87.9 - 15
24	38.8 - 20	54.2 - 19	69.6 - 18	82.6 - 17	95.7 - 16
25	42.3 - 21	59.1 - 20	75.9 - 18	90.2 - 17	104.4 - 17
26	45.8 - 22	64.0 - 20	82.2 - 19	97.7 - 18	113.2 - 17
27	49.5 - 22	69.2 - 21	88.8 - 20	105.6 - 19	122.4 - 18
28	53.2 - 23	74.3 - 22	95.4 - 21	113.6 - 20	131.7 - 19
29	57.4 - 24	80.2 - 23	103.0 - 21	122.6 - 21	142.1 - 20
30	61.7 - 25	86.1 - 24	110.5 - 22	131.5 - 21	152.5 - 20
31	66.3 - 26	92.4 - 24	118.6 - 23	141.3 - 22	164.0 - 21
32	70.9 - 27	98.8 - 25	126.7 - 24	151.1 - 23	175.5 - 22
33	75.5 - 27	105.2 - 26	134.8 - 25	160.8 - 24	186.8 - 23
34	80.1 - 28	111.5 - 27	142.9 - 25	170.5 - 24	198.1 - 23
35	85.3 - 29	118.8 - 28	152.2 - 26	181.7 - 25	211.2 - 24
36	90.5 - 30	126.0 - 28	161.6 - 27	192.9 - 26	224.2 - 25
37	95.7 - 31	133.2 - 29	170.8 - 28	204.1 - 27	237.4 - 26
38	100.9 - 31	140.4 - 30	179.9 - 29	215.2 - 28	250.5 - 27
39	106.7 - 32	148.5 - 31	190.3 - 29	227.6 - 28	264.8 - 27
40	112.5 - 33	156.6 - 32	200.7 - 30	239.9 - 29	279.1 - 28

Table 20.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	3.5	3.9	4.2	4.6	4.9	5.3	5.6
6	4.7	5.1	5.6	6.0	6.5	6.9	7.3
7	6.2	6.8	7.4	7.9	8.5	9.1	9.6
8	7.9	8.6	9.4	10.1	10.8	11.5	12.2
9	9.6	10.4	11.3	12.1	13.0	13.8	14.6
10	11.4	12.3	13.3	14.2	15.2	16.1	17.1

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12	25.0 - 6"	27.2 - 6"				
13	29.6 - 7	32.2 - 6				
14	34.2 - 8	37.3 - 7				
15	40.0 - 8	43.8 - 8				
16	45.8 - 9	50.3 - 8				
17	52.0 - 10	57.0 - 9				
18	58.1 - 11	63.8 - 10				
19	65.4 - 11	71.8 - 10				
20	72.6 - 12	79.8 - 11	85.8 - 10"	91.9 - 9"		
21	80.9 - 13	89.0 - 12	95.9 - 11	102.8 - 10		
22	89.1 - 13	98.1 - 12	105.9 - 11	113.7 - 10		
23	97.6 - 14	107.4 - 13	116.2 - 12	125.1 - 11		
24	106.2 - 15	116.6 - 14	126.6 - 13	136.5 - 11		
25	116.1 - 15	127.8 - 14	138.8 - 13	149.7 - 12		
26	126.1 - 16	139.0 - 15	151.0 - 14	162.9 - 13		
27	136.3 - 17	150.2 - 16	163.2 - 15	176.3 - 14		
28	146.5 - 18	161.3 - 16	175.5 - 15	189.7 - 14	202.7 - 13"	215.7 - 11
29	158.0 - 18	174.0 - 17	189.6 - 16	205.3 - 15	220.0 - 13	234.6 - 12
30	169.6 - 19	186.8 - 18	203.8 - 17	220.9 - 15	237.2 - 14	253.5 - 13
31	182.7 - 20	201.4 - 18	219.4 - 17	237.4 - 16	255.3 - 15	273.2 - 14
32	195.7 - 21	215.9 - 19	234.9 - 18	253.9 - 17	273.4 - 15	292.8 - 14
33	208.4 - 21	230.0 - 20	250.3 - 19	270.6 - 17	291.6 - 16	312.7 - 15
34	221.0 - 22	244.0 - 21	265.6 - 19	287.2 - 18	309.9 - 17	332.6 - 16
35	235.7 - 23	260.2 - 21	283.4 - 20	306.6 - 19	330.4 - 17	354.2 - 16
36	250.4 - 24	276.5 - 22	301.3 - 21	326.1 - 19	351.0 - 18	375.8 - 17
37	265.0 - 24	292.6 - 23	319.2 - 21	345.8 - 20	372.0 - 19	398.2 - 17
38	279.6 - 25	308.6 - 24	337.0 - 22	365.5 - 21	393.1 - 20	420.7 - 18
39	295.8 - 26	326.9 - 24	356.6 - 23	386.2 - 22	415.6 - 20	444.9 - 19
40	312.2 - 27	345.2 - 25	376.0 - 24	406.9 - 22	438.0 - 21	469.1 - 19

Table 21.--Gross volume (cubic feet, inside bark)
Form Class 84 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.4	1.8	2.1	2.5	2.8	3.2
6	2.0	2.5	2.9	3.4	3.8	4.3
7	2.7	3.5	4.1	4.6	5.2	5.8
8	3.4	4.4	5.1	5.8	6.5	7.2
9	4.3	5.6	6.4	7.3	8.1	9.0
10	5.2	6.8	7.8	8.8	9.7	10.7

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	6.8 - 8	9.4 - 8"	12.0 - 7	14.0 - 6"	15.9 - 6"
11	8.3 - 9	11.5 - 8	14.7 - 8	17.2 - 7	19.6 - 7
12	9.8 - 10	13.6 - 9	17.4 - 8	20.4 - 8	23.3 - 7
13	11.6 - 11	16.1 - 10	20.6 - 9	24.2 - 9	27.8 - 8
14	13.4 - 12	18.6 - 11	23.9 - 10	28.1 - 9	32.3 - 9
15	15.4 - 13	21.4 - 12	27.4 - 11	32.3 - 10	37.2 - 9
16	17.3 - 13	24.1 - 12	30.9 - 11	36.4 - 11	42.0 - 10
17	19.7 - 14	27.4 - 13	35.2 - 12	41.6 - 12	48.0 - 11
18	22.1 - 15	30.8 - 14	39.5 - 13	46.7 - 12	53.9 - 12
19	24.7 - 16	34.4 - 15	44.2 - 14	52.4 - 13	60.5 - 12
20	27.3 - 17	38.2 - 16	49.0 - 15	58.0 - 14	67.1 - 13
21	30.2 - 18	42.3 - 17	54.4 - 15	64.4 - 15	74.5 - 14
22	33.2 - 18	46.4 - 17	59.7 - 16	70.8 - 15	81.9 - 15
23	36.6 - 19	51.2 - 18	65.8 - 17	78.1 - 16	90.4 - 15
24	40.0 - 20	55.9 - 19	71.8 - 18	85.3 - 17	98.8 - 16
25	43.3 - 21	60.6 - 20	77.8 - 19	92.4 - 18	107.1 - 17
26	46.6 - 22	65.2 - 21	83.8 - 19	99.6 - 18	115.4 - 18
27	50.6 - 23	70.7 - 21	90.8 - 20	108.0 - 19	125.3 - 18
28	54.5 - 23	76.2 - 22	97.8 - 21	116.5 - 20	135.2 - 19
29	58.6 - 24	81.9 - 23	105.2 - 22	125.4 - 21	145.6 - 20
30	62.7 - 25	87.7 - 24	112.7 - 23	134.3 - 22	155.9 - 21
31	67.3 - 26	94.0 - 25	120.8 - 23	144.2 - 22	167.5 - 21
32	71.9 - 27	100.4 - 26	129.0 - 24	154.0 - 23	179.1 - 22
33	76.8 - 28	107.2 - 26	137.7 - 25	164.4 - 24	191.2 - 23
34	81.7 - 29	114.0 - 27	146.4 - 26	174.9 - 25	203.4 - 24
35	86.6 - 29	121.0 - 28	155.3 - 27	185.6 - 26	215.8 - 25
36	91.6 - 30	127.9 - 29	164.2 - 27	196.2 - 26	228.2 - 25
37	97.2 - 31	135.6 - 30	174.0 - 28	208.2 - 27	242.3 - 26
38	102.7 - 32	143.2 - 30	183.8 - 29	220.1 - 28	256.4 - 27
39	108.6 - 33	151.4 - 31	194.3 - 30	232.6 - 29	270.9 - 28
40	114.4 - 34	159.6 - 32	204.8 - 31	245.1 - 30	285.4 - 29

Table 21.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	3.5	3.9	4.2	4.6	4.9	5.3	5.6
6	4.7	5.1	5.6	6.0	6.5	6.9	7.3
7	6.3	6.9	7.5	8.0	8.6	9.2	9.7
8	7.9	8.6	9.4	10.1	10.8	11.5	12.2
9	9.8	10.6	11.5	12.3	13.2	14.0	14.8
10	11.7	12.7	13.7	14.6	15.6	16.6	17.6

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12	25.6 - 6"	27.8 - 6"				
13	30.5 - 7	33.2 - 6				
14	35.5 - 8	38.7 - 7				
15	41.0 - 9	44.9 - 8				
16	46.6 - 9	51.1 - 8				
17	53.2 - 10	58.4 - 9				
18	59.8 - 11	65.7 - 10				
19	67.2 - 11	73.8 - 11				
20	74.5 - 12	81.9 - 11	88.1 - 10	94.3 - 9"		
21	82.8 - 13	91.2 - 12	98.3 - 11	105.4 - 10		
22	91.2 - 14	100.5 - 13	108.5 - 12	116.5 - 10		
23	100.4 - 14	110.5 - 13	119.6 - 12	128.8 - 11		
24	109.6 - 15	120.5 - 14	130.8 - 13	141.2 - 12		
25	119.2 - 16	131.2 - 15	142.4 - 13	153.7 - 12		
26	128.6 - 16	141.8 - 15	154.0 - 14	166.2 - 13		
27	139.6 - 17	153.8 - 16	167.2 - 15	180.6 - 14		
28	150.5 - 18	165.8 - 17	180.4 - 16	195.1 - 14	208.6 - 13"	222.1 - 11"
29	162.0 - 19	178.5 - 17	194.6 - 16	210.7 - 15	225.8 - 14	241.0 - 12
30	173.6 - 19	191.2 - 18	208.8 - 17	226.3 - 16	243.2 - 14	260.0 - 13
31	186.7 - 20	205.9 - 19	224.4 - 18	243.0 - 16	261.4 - 15	279.8 - 14
32	199.8 - 21	220.6 - 20	240.2 - 18	259.7 - 17	279.7 - 16	299.7 - 15
33	213.4 - 22	235.7 - 20	256.6 - 19	277.6 - 18	299.4 - 16	321.2 - 15
34	227.1 - 22	250.8 - 21	273.2 - 20	295.6 - 18	319.1 - 17	342.6 - 16
35	241.0 - 23	266.3 - 22	290.2 - 20	314.1 - 19	338.6 - 18	363.1 - 17
36	255.0 - 24	281.8 - 22	307.2 - 21	332.6 - 20	358.1 - 18	383.6 - 17
37	270.6 - 25	299.0 - 23	326.4 - 22	353.8 - 21	380.8 - 19	407.8 - 18
38	286.4 - 26	316.3 - 24	345.6 - 23	375.0 - 21	403.5 - 20	432.0 - 18
39	302.8 - 26	334.8 - 25	365.4 - 23	395.9 - 22	426.2 - 21	456.5 - 19
40	319.4 - 27	353.3 - 26	385.0 - 24	416.8 - 23	448.9 - 21	481.0 - 20

Table 22.--Gross volume (cubic feet, inside bark)
Form Class 85 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.4	1.8	2.2	2.5	2.9	3.3
6	2.1	2.6	3.1	3.5	4.0	4.4
7	2.8	3.6	4.2	4.8	5.4	6.0
8	3.5	4.5	5.2	6.0	6.7	7.4
9	4.3	5.6	6.5	7.3	8.2	9.1
10	5.3	6.9	7.9	8.9	9.9	10.9

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	6.9 - 8"	9.6 - 8"	12.3 - 7"	14.2 - 6"	16.2 - 6"
11	8.4 - 9	11.7 - 9	15.0 - 8	17.5 - 7	20.0 - 7
12	10.0 - 10	13.9 - 9	17.8 - 9	20.8 - 8	23.8 - 7
13	11.8 - 11	16.4 - 10	21.0 - 9	24.6 - 9	28.3 - 8
14	13.6 - 12	19.0 - 11	24.3 - 10	28.6 - 10	32.8 - 9
15	15.6 - 13	21.8 - 12	28.0 - 11	33.0 - 10	38.0 - 10
16	17.6 - 14	24.6 - 13	31.6 - 12	37.4 - 11	43.2 - 10
17	20.0 - 14	28.0 - 13	35.9 - 12	42.6 - 12	49.2 - 11
18	22.3 - 15	31.2 - 14	40.2 - 13	47.6 - 13	55.1 - 12
19	25.0 - 16	35.0 - 15	45.0 - 14	53.4 - 13	61.8 - 13
20	27.6 - 17	38.8 - 16	49.9 - 15	59.2 - 14	68.5 - 13
21	30.8 - 18	43.1 - 17	55.4 - 16	65.8 - 15	76.2 - 14
22	33.9 - 19	47.4 - 18	61.0 - 16	72.4 - 16	83.8 - 15
23	37.3 - 20	52.2 - 18	67.1 - 17	79.7 - 16	92.3 - 16
24	40.7 - 20	57.0 - 19	73.2 - 18	87.0 - 17	100.8 - 16
25	44.2 - 21	61.9 - 20	79.6 - 19	94.7 - 18	109.8 - 17
26	47.8 - 22	66.9 - 21	86.0 - 20	102.4 - 19	118.7 - 18
27	51.6 - 23	72.3 - 22	93.0 - 20	110.8 - 20	128.6 - 19
28	55.4 - 24	77.6 - 23	99.9 - 21	119.2 - 20	138.4 - 19
29	59.8 - 25	83.7 - 23	107.6 - 22	128.3 - 21	149.0 - 20
30	64.1 - 25	89.8 - 24	115.4 - 23	137.6 - 22	159.7 - 21
31	68.5 - 26	96.0 - 25	123.4 - 24	147.3 - 23	171.2 - 22
32	72.9 - 27	102.2 - 26	131.4 - 24	157.0 - 23	182.7 - 22
33	77.8 - 28	109.0 - 27	140.2 - 25	167.6 - 24	195.0 - 23
34	82.8 - 29	115.9 - 27	149.0 - 26	178.2 - 25	207.3 - 24
35	88.0 - 30	123.2 - 28	158.4 - 27	189.5 - 26	220.6 - 25
36	93.3 - 31	130.6 - 29	167.9 - 28	200.9 - 27	233.9 - 26
37	98.9 - 31	138.4 - 30	177.8 - 29	213.0 - 28	248.2 - 27
38	104.5 - 32	146.1 - 31	187.7 - 29	225.0 - 28	262.4 - 27
39	110.4 - 33	154.4 - 32	198.3 - 30	237.6 - 29	277.0 - 28
40	116.3 - 34	162.6 - 33	208.9 - 31	250.3 - 30	291.7 - 29

Table 22.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	3.6	4.0	4.4	4.7	5.1	5.5	5.8
6	4.9	5.4	5.8	6.3	6.7	7.2	7.7
7	6.5	7.1	7.7	8.3	8.9	9.5	10.1
8	8.2	8.9	9.6	10.4	11.1	11.8	12.6
9	9.9	10.8	11.6	12.5	13.4	14.2	15.1
10	11.9	12.9	14.0	15.0	16.0	17.0	18.0

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12	26.1 - 7"	28.4 - 6"				
13	31.1 - 7	33.9 - 6				
14	36.1 - 8	39.4 - 7				
15	42.0 - 9	46.0 - 8				
16	47.9 - 10	52.6 - 9				
17	54.6 - 10	60.0 - 9				
18	61.2 - 11	67.3 - 10				
19	68.6 - 12	75.5 - 11				
20	76.1 - 12	83.7 - 11	90.2 - 10"	96.6 - 9"		
21	84.8 - 13	93.3 - 12	100.6 - 11	108.0 - 10		
22	93.4 - 14	102.9 - 13	111.2 - 12	119.4 - 11		
23	102.6 - 14	113.0 - 13	122.4 - 12	131.8 - 11		
24	111.9 - 15	123.0 - 14	133.6 - 13	144.3 - 12		
25	122.2 - 16	134.5 - 15	146.2 - 14	157.8 - 13		
26	132.4 - 17	146.0 - 16	158.6 - 14	171.3 - 13		
27	143.3 - 17	158.0 - 16	171.9 - 15	185.8 - 14		
28	154.2 - 18	169.9 - 17	185.0 - 16	200.2 - 15	214.1 - 13"	228.0 - 12"
29	166.0 - 19	183.0 - 18	199.6 - 16	216.2 - 15	231.8 - 14	247.4 - 13
30	177.9 - 20	196.1 - 18	214.2 - 17	232.2 - 16	249.6 - 15	266.9 - 13
31	191.0 - 20	210.8 - 19	229.8 - 18	248.8 - 17	267.8 - 15	286.8 - 14
32	204.0 - 21	225.4 - 20	245.4 - 19	265.5 - 17	286.0 - 16	306.6 - 15
33	217.8 - 22	240.6 - 21	262.2 - 19	283.7 - 18	306.0 - 17	328.4 - 16
34	231.6 - 23	255.9 - 21	278.9 - 20	301.9 - 19	326.0 - 17	350.1 - 16
35	246.6 - 23	272.5 - 22	297.2 - 21	321.8 - 19	347.0 - 18	372.2 - 17
36	261.5 - 24	289.1 - 23	315.4 - 21	341.7 - 20	368.0 - 19	394.3 - 18
37	277.4 - 25	306.6 - 24	334.9 - 22	363.2 - 21	391.0 - 20	418.8 - 18
38	293.2 - 26	324.1 - 24	354.4 - 23	384.6 - 22	414.0 - 20	443.3 - 19
39	309.9 - 27	342.8 - 25	374.3 - 24	405.8 - 22	437.0 - 21	468.1 - 19
40	326.6 - 27	361.6 - 26	394.3 - 25	427.0 - 23	460.0 - 22	492.9 - 20

Table 23.--Gross volume (cubic feet, inside bark)
Form Class 86 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.5	1.9	2.3	2.6	3.0	3.4
6	2.1	2.7	3.2	3.7	4.1	4.6
7	2.8	3.6	4.2	4.8	5.4	6.0
8	3.6	4.7	5.5	6.2	7.0	7.7
9	4.4	5.7	6.6	7.5	8.4	9.3
10	5.4	7.1	8.1	9.2	10.2	11.3

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	7.1 - 9"	9.8 - 8"	12.6 - 7"	14.6 - 7"	16.7 - 6"
11	8.6 - 9	12.0 - 9	15.4 - 8	18.0 - 7	20.6 - 7
12	10.2 - 10	14.2 - 9	18.1 - 9	21.2 - 8	24.4 - 7
13	11.9 - 11	16.6 - 10	21.3 - 9	25.0 - 9	28.8 - 8
14	13.6 - 12	19.0 - 11	24.5 - 10	28.8 - 10	33.2 - 9
15	15.8 - 13	22.2 - 12	28.6 - 11	33.7 - 10	38.8 - 10
16	18.1 - 14	25.4 - 13	32.6 - 12	38.6 - 11	44.5 - 11
17	20.5 - 15	28.8 - 14	37.0 - 13	43.8 - 12	50.6 - 11
18	22.9 - 15	32.1 - 14	41.3 - 13	49.0 - 13	56.6 - 12
19	25.6 - 16	35.9 - 15	46.2 - 14	54.8 - 14	63.4 - 13
20	28.3 - 17	39.8 - 16	51.2 - 15	60.7 - 14	70.2 - 14
21	31.4 - 18	44.1 - 17	56.8 - 16	67.4 - 15	78.0 - 14
22	34.6 - 19	48.5 - 18	62.4 - 17	74.0 - 16	85.7 - 15
23	37.8 - 20	53.0 - 19	68.3 - 17	81.2 - 17	94.1 - 16
24	41.1 - 21	57.6 - 19	74.2 - 18	88.4 - 17	102.5 - 17
25	44.8 - 21	63.0 - 20	81.1 - 19	96.6 - 18	112.0 - 17
26	48.6 - 22	68.3 - 21	88.0 - 20	104.8 - 19	121.6 - 18
27	52.4 - 23	73.7 - 22	95.0 - 21	113.3 - 20	131.6 - 19
28	56.3 - 24	79.2 - 23	102.0 - 22	121.8 - 21	141.6 - 20
29	60.6 - 25	85.2 - 24	109.8 - 22	131.1 - 21	152.4 - 20
30	65.0 - 26	91.2 - 24	117.5 - 23	140.3 - 22	163.1 - 21
31	69.7 - 27	97.8 - 25	125.8 - 24	150.4 - 23	175.0 - 22
32	74.4 - 27	104.3 - 26	134.2 - 25	160.5 - 24	186.8 - 23
33	79.2 - 28	111.0 - 27	142.8 - 26	170.9 - 25	199.0 - 24
34	83.9 - 29	117.7 - 28	151.5 - 26	181.4 - 25	211.2 - 24
35	89.4 - 30	125.5 - 29	161.6 - 27	193.5 - 26	225.4 - 25
36	95.0 - 31	133.3 - 30	171.6 - 28	205.6 - 27	239.5 - 26
37	100.4 - 32	140.9 - 30	181.4 - 29	217.5 - 28	253.6 - 27
38	105.7 - 33	148.4 - 31	191.1 - 30	229.4 - 29	267.8 - 28
39	111.6 - 34	156.7 - 32	201.8 - 31	242.2 - 30	282.6 - 29
40	117.5 - 34	165.0 - 33	212.4 - 31	254.8 - 30	297.3 - 29

Table 23--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	3.7	4.1	4.5	4.8	5.2	5.6	5.9
6	5.1	5.6	6.1	6.5	7.0	7.5	8.0
7	6.7	7.3	7.9	8.5	9.1	9.7	10.3
8	8.5	9.3	10.0	10.8	11.5	12.3	13.1
9	10.2	11.1	11.9	12.8	13.7	14.6	15.5
10	12.3	13.3	14.4	15.4	16.5	17.5	18.5

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12	26.8 - 7"	29.1 - 6"				
13	31.6 - 7	34.5 - 7				
14	36.6 - 8	39.9 - 7				
15	43.0 - 9	47.1 - 8				
16	49.4 - 10	54.3 - 9				
17	56.2 - 10	61.8 - 10				
18	62.9 - 11	69.2 - 10				
19	70.5 - 12	77.6 - 11				
20	78.1 - 13	86.0 - 12	92.6 - 10"	99.2 - 9"		
21	86.8 - 13	95.6 - 12	103.2 - 11	110.8 - 10		
22	95.4 - 14	105.2 - 13	113.8 - 12	122.3 - 11		
23	104.6 - 15	115.2 - 14	125.0 - 13	134.7 - 12		
24	113.9 - 15	125.3 - 14	136.2 - 13	147.1 - 12		
25	124.8 - 16	137.6 - 15	149.6 - 14	161.6 - 13		
26	135.7 - 17	149.8 - 16	162.9 - 15	176.0 - 14		
27	146.8 - 18	162.0 - 17	176.4 - 15	190.7 - 14		
28	157.8 - 18	174.1 - 17	189.8 - 16	205.4 - 15	219.8 - 14"	234.1 - 12"
29	169.8 - 19	187.3 - 18	204.4 - 17	221.6 - 16	237.7 - 14	253.8 - 13
30	181.8 - 20	200.5 - 19	219.1 - 17	237.7 - 16	255.6 - 15	273.4 - 14
31	195.3 - 21	215.6 - 19	235.2 - 18	254.8 - 17	274.3 - 16	293.8 - 14
32	208.8 - 21	230.7 - 20	251.4 - 19	272.0 - 18	293.0 - 16	314.1 - 15
33	222.4 - 22	245.9 - 21	268.0 - 20	290.1 - 18	313.0 - 17	335.8 - 16
34	236.2 - 23	261.1 - 22	284.6 - 20	308.2 - 19	332.9 - 18	357.6 - 17
35	252.1 - 24	278.8 - 22	304.2 - 21	329.5 - 20	355.4 - 19	381.4 - 17
36	268.0 - 25	296.6 - 23	323.7 - 22	350.8 - 21	378.0 - 19	405.1 - 18
37	283.8 - 25	314.0 - 24	343.1 - 23	372.2 - 21	400.9 - 20	429.6 - 19
38	299.6 - 26	331.4 - 25	362.6 - 23	393.7 - 22	424.0 - 21	454.2 - 19
39	316.4 - 27	350.3 - 26	382.7 - 24	415.1 - 23	447.2 - 21	479.2 - 20
30	333.2 - 28	369.2 - 26	402.8 - 25	436.5 - 23	470.4 - 22	504.3 - 20

Table 24.--Gross volume (cubic feet, inside bark)
Form Class 87 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.6	2.0	2.4	2.7	3.1	3.5
6	2.1	2.7	3.2	3.7	4.1	4.6
7	2.9	3.7	4.3	5.0	5.6	6.2
8	3.7	4.8	5.6	6.4	7.2	7.9
9	4.5	5.9	6.8	7.7	8.7	9.6
10	5.5	7.2	8.3	9.3	10.4	11.5

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	7.2 - 9"	10.0 - 8"	12.8 - 7"	14.9 - 7"	17.0 - 6"
11	8.8 - 10	12.2 - 9	15.6 - 8	18.3 - 7	21.0 - 7
12	10.4 - 10	14.4 - 10	18.5 - 9	21.7 - 8	24.9 - 8
13	12.2 - 11	17.1 - 10	22.0 - 10	25.8 - 9	29.7 - 8
14	14.1 - 12	19.8 - 11	25.4 - 10	30.0 - 10	34.5 - 9
15	16.2 - 13	22.7 - 12	29.2 - 11	34.5 - 11	39.8 - 10
16	18.4 - 14	25.8 - 13	33.1 - 12	39.2 - 11	45.2 - 11
17	21.0 - 15	29.4 - 14	37.8 - 13	44.8 - 12	51.7 - 11
18	23.5 - 16	33.0 - 15	42.4 - 14	50.3 - 12	58.2 - 12
19	26.2 - 17	36.8 - 16	47.4 - 14	56.2 - 14	65.0 - 13
20	28.9 - 17	40.6 - 16	52.3 - 15	62.1 - 15	71.9 - 14
21	32.1 - 18	45.0 - 17	58.0 - 16	68.8 - 15	79.7 - 15
22	35.3 - 19	49.5 - 18	63.7 - 17	75.6 - 16	87.5 - 15
23	38.8 - 20	54.4 - 19	70.0 - 18	83.3 - 17	96.6 - 16
24	42.2 - 21	59.3 - 20	76.4 - 19	91.0 - 18	105.6 - 17
25	45.8 - 22	64.4 - 21	83.0 - 19	98.9 - 18	114.8 - 18
26	49.4 - 23	69.4 - 21	89.5 - 20	106.7 - 19	123.9 - 18
27	53.5 - 23	75.2 - 22	97.0 - 21	115.8 - 20	134.6 - 19
28	57.6 - 24	81.0 - 23	104.5 - 22	124.8 - 21	145.2 - 20
29	61.8 - 25	87.0 - 24	112.2 - 23	134.0 - 22	155.9 - 21
30	66.0 - 26	92.9 - 25	119.8 - 23	143.2 - 22 ¼	166.6 - 21
31	70.7 - 27	99.4 - 26	128.2 - 24	153.4 - 23	178.6 - 22
32	75.4 - 28	106.0 - 26	136.6 - 25	163.6 - 24	190.5 - 23
33	80.4 - 29	113.1 - 27	145.8 - 26	174.7 - 25	203.6 - 24
34	85.5 - 30	120.3 - 28	155.1 - 27	185.8 - 26	216.6 - 25
35	90.8 - 30	127.8 - 29	164.8 - 28	197.5 - 27	230.2 - 26
36	96.2 - 31	135.3 - 30	174.4 - 28	209.1 - 27	243.8 - 26
37	101.8 - 32	143.3 - 31	184.8 - 29	221.8 - 28	258.8 - 27
38	107.5 - 33	151.3 - 32	195.1 - 30	234.5 - 29	273.9 - 28
39	113.5 - 34	159.7 - 32	205.9 - 31	247.4 - 30	288.8 - 29
40	119.5 - 35	168.1 - 33	216.7 - 32	260.2 - 31	303.8 - 30

Table 24--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	3.8	4.2	4.6	4.9	5.3	5.7	6.0
6	5.1	5.6	6.1	6.5	7.0	7.5	8.0
7	6.9	7.5	8.2	8.8	9.4	10.1	10.7
8	8.7	9.5	10.3	11.1	11.9	12.6	13.4
9	10.5	11.4	12.3	13.3	14.2	15.1	16.0
10	12.5	13.6	14.7	15.7	16.8	17.9	18.9

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12	27.3 - 7"	29.7 - 6"				
13	32.6 - 8	35.6 - 7				
14	38.0 - 8	41.5 - 7				
15	44.1 - 9	48.4 - 8				
16	50.2 - 10	55.2 - 9				
17	57.4 - 11	63.2 - 10				
18	64.7 - 11	71.2 - 10				
19	72.3 - 12	79.6 - 11				
20	80.0 - 13	88.1 - 12	95.0 - 11"	101.8 - 10		
21	88.8 - 14	97.9 - 12	105.7 - 11	113.5 - 10		
22	97.6 - 14	107.7 - 13	116.4 - 12	125.2 - 11		
23	107.5 - 15	118.4 - 14	128.4 - 13	138.5 - 12		
24	117.4 - 16	129.2 - 15	140.5 - 14	151.8 - 12		
25	127.9 - 16	141.0 - 15	153.3 - 14	165.6 - 13		
26	138.3 - 17	152.7 - 16	166.1 - 15	179.5 - 14		
27	150.2 - 18	165.8 - 17	180.5 - 16	195.2 - 15		
28	162.0 - 19	178.8 - 18	194.9 - 16	211.0 - 15	225.8 - 14"	240.6 - 12"
29	174.0 - 19	192.0 - 18	209.6 - 17	227.2 - 16	243.8 - 15	260.4 - 13
30	185.8 - 20	205.1 - 19	224.2 - 18	243.4 - 17	261.8 - 15	280.1 - 14
31	199.4 - 21	220.3 - 20	240.5 - 18	260.7 - 17	280.6 - 16	300.6 - 15
32	213.0 - 22	235.5 - 20	256.8 - 19	278.0 - 18	299.6 - 17	321.2 - 15
33	227.7 - 23	251.8 - 21	274.6 - 20	297.4 - 19	321.0 - 17	344.6 - 16
34	242.4 - 23	268.1 - 22	292.5 - 21	316.9 - 19	342.4 - 18	367.9 - 17
35	257.6 - 24	285.1 - 23	311.2 - 21	337.3 - 20	364.0 - 19	390.6 - 18
36	273.0 - 25	302.1 - 23	329.9 - 22	357.7 - 21	385.5 - 20	413.3 - 18
37	289.8 - 26	320.7 - 24	349.2 - 23	377.6 - 22	408.6 - 20	439.6 - 19
38	306.6 - 27	339.3 - 25	368.4 - 24	397.6 - 23	431.8 - 21	465.9 - 20
39	323.6 - 27	358.5 - 26	390.4 - 25	422.2 - 23	456.8 - 22	491.3 - 20
40	340.8 - 28	377.7 - 27	412.3 - 25	446.9 - 24	481.8 - 22	516.7 - 21

Table 25.--Gross volume (cubic feet, inside bark)
Form Class 88 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.6	2.0	2.4	2.8	3.2	3.5
6	2.2	2.8	3.3	3.8	4.3	4.8
7	2.9	3.8	4.4	5.1	5.7	6.3
8	3.7	4.8	5.6	6.4	7.2	7.9
9	4.6	6.0	6.9	7.8	8.8	9.7
10	5.7	7.4	8.5	9.5	10.6	11.7

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	7.4 - 9"	10.3 - 8"	13.2 - 7"	15.4 - 7"	17.5 - 6"
11	9.0 - 10	12.6 - 9	16.1 - 8	18.8 - 8	21.6 - 7
12	10.6 - 11	14.8 - 10	19.0 - 9	22.4 - 8	25.7 - 8
13	12.4 - 11	17.4 - 11	22.4 - 10	26.4 - 9	30.4 - 9
14	14.3 - 12	20.0 - 11	25.8 - 11	30.4 - 10	35.0 - 9
15	16.6 - 13	23.3 - 12	30.0 - 11	35.4 - 11	40.8 - 10
16	18.9 - 14	26.5 - 13	34.1 - 12	40.4 - 12	46.6 - 11
17	21.4 - 15	30.0 - 14	38.6 - 13	45.7 - 12	52.8 - 12
18	23.8 - 16	33.4 - 15	43.0 - 14	51.0 - 13	59.0 - 12
19	26.7 - 17	37.5 - 16	48.3 - 15	57.4 - 14	66.4 - 13
20	29.6 - 18	41.6 - 17	53.6 - 15	63.6 - 15	73.7 - 14
21	32.8 - 18	46.1 - 17	59.4 - 16	70.6 - 16	81.9 - 15
22	36.0 - 19	50.6 - 18	65.3 - 17	77.7 - 16	90.1 - 16
23	39.3 - 20	55.4 - 19	71.4 - 18	85.0 - 17	98.7 - 16
24	42.6 - 21	60.0 - 20	77.4 - 19	92.4 - 18	107.3 - 17
25	46.4 - 22	65.4 - 21	84.4 - 20	100.8 - 19	117.1 - 18
26	50.3 - 23	70.9 - 22	91.5 - 20	109.2 - 20	126.9 - 19
27	54.2 - 24	76.4 - 23	98.6 - 21	117.8 - 20	137.1 - 19
28	58.1 - 25	82.0 - 23	105.8 - 22	126.6 - 21	147.3 - 20
29	62.8 - 25	88.5 - 24	114.2 - 23	136.6 - 22	158.9 - 21
30	67.4 - 26	95.0 - 25	122.5 - 24	146.5 - 23	170.5 - 22
31	72.2 - 27	101.8 - 26	131.3 - 25	157.2 - 24	183.1 - 23
32	77.0 - 28	108.6 - 27	140.1 - 25	167.9 - 24	195.7 - 23
33	81.8 - 29	115.4 - 28	148.9 - 26	178.5 - 25	208.1 - 24
34	86.6 - 30	122.2 - 28	157.7 - 27	189.1 - 26	220.5 - 25
35	92.2 - 31	130.1 - 29	168.0 - 28	201.5 - 27	235.0 - 26
36	97.9 - 32	138.0 - 30	178.2 - 29	213.8 - 28	249.5 - 27
37	103.3 - 33	145.7 - 31	188.1 - 30	226.0 - 29	263.9 - 28
38	108.7 - 33	153.4 - 32	198.0 - 30	238.2 - 29	278.3 - 28
39	115.0 - 34	162.2 - 33	209.5 - 31	251.9 - 30	294.3 - 29
40	121.4 - 35	171.2 - 34	221.0 - 32	265.6 - 31	310.3 - 30

Table 25.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	3.9	4.3	4.7	5.1	5.5	5.8	6.2
6	5.3	5.8	6.3	6.8	7.3	7.8	8.3
7	7.0	7.6	8.3	8.9	9.5	10.2	10.8
8	8.7	9.5	10.3	11.1	11.9	12.6	13.4
9	10.6	11.5	12.4	13.4	14.3	15.2	16.1
10	12.7	13.8	14.9	15.9	17.0	18.1	19.1

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12	28.2 - 7"	30.8 - 6"				
13	33.4 - 8	36.5 - 7				
14	38.6 - 8	42.2 - 8				
15	45.2 - 9	49.6 - 8				
16	51.8 - 10	56.9 - 9				
17	58.7 - 11	64.6 - 10				
18	65.6 - 11	72.3 - 11				
19	73.9 - 12	81.4 - 11				
20	82.0 - 13	90.4 - 12	97.4 - 11"	104.5 - 10		
21	91.3 - 14	100.7 - 13	108.8 - 12	116.8 - 11		
22	100.6 - 15	111.0 - 13	120.1 - 12	129.2 - 11		
23	110.0 - 15	121.2 - 14	131.6 - 13	142.0 - 12		
24	119.4 - 16	131.5 - 15	143.1 - 14	154.7 - 13		
25	130.6 - 17	144.1 - 16	156.8 - 14	169.6 - 13		
26	141.8 - 18	156.7 - 16	170.6 - 15	184.4 - 14		
27	153.1 - 18	169.1 - 17	184.2 - 16	199.4 - 15		
28	164.4 - 19	181.5 - 18	198.0 - 17	214.4 - 16	229.6 - 14"	244.7 - 13"
29	177.4 - 20	195.8 - 18	213.9 - 17	232.0 - 16	249.0 - 15	266.0 - 13
30	190.4 - 20	210.2 - 19	229.8 - 18	249.5 - 17	268.4 - 16	287.3 - 14
31	204.6 - 21	226.2 - 20	247.0 - 19	267.9 - 18	288.6 - 16	309.2 - 15
32	219.0 - 22	242.3 - 21	264.3 - 20	286.3 - 18	308.7 - 17	331.1 - 16
33	233.0 - 23	257.8 - 22	281.3 - 20	304.8 - 19	329.1 - 18	353.4 - 17
34	247.0 - 24	273.4 - 22	298.4 - 21	323.4 - 20	349.5 - 18	375.6 - 17
35	263.3 - 25	291.6 - 23	318.4 - 22	345.2 - 20	372.6 - 19	400.0 - 18
36	279.6 - 25	309.7 - 24	338.4 - 23	367.0 - 21	395.7 - 20	424.4 - 19
37	295.6 - 26	327.4 - 25	358.2 - 23	389.0 - 22	419.2 - 21	449.4 - 19
38	311.8 - 27	345.2 - 25	378.0 - 24	410.9 - 23	442.7 - 21	474.5 - 20
39	330.0 - 28	365.7 - 26	400.0 - 25	434.2 - 24	468.0 - 22	501.8 - 21
40	348.2 - 29	386.2 - 27	421.8 - 26	457.4 - 24	493.2 - 23	529.1 - 21

Table 26.--Gross volume (cubic feet, inside bark)
Form Class 89 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.6	2.0	2.4	2.8	3.2	3.5
6	2.2	2.8	3.3	3.8	4.3	4.8
7	2.9	3.8	4.4	5.1	5.7	6.3
8	3.8	4.9	5.7	6.5	7.3	8.0
9	4.7	6.2	7.2	8.1	9.1	10.0
10	5.8	7.6	8.7	9.8	10.9	12.0

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	7.6 - 9"	10.6 - 8"	13.5 - 7"	15.8 - 7"	18.0 - 6"
11	9.2 - 10	12.8 - 9	16.4 - 8	19.2 - 8	22.1 - 7
12	10.8 - 11	15.1 - 10	19.4 - 9	22.8 - 8	26.2 - 8
13	12.8 - 12	17.9 - 11	23.0 - 10	27.1 - 9	31.2 - 9
14	14.8 - 12	20.8 - 12	26.7 - 11	31.5 - 10	36.3 - 9
15	17.0 - 13	23.8 - 12	30.6 - 12	36.2 - 11	41.8 - 10
16	19.1 - 14	26.8 - 13	34.5 - 12	40.9 - 12	47.3 - 11
17	21.7 - 15	30.4 - 14	39.2 - 13	46.6 - 12	53.9 - 12
18	24.3 - 16	34.2 - 15	44.0 - 14	52.2 - 13	60.5 - 13
19	27.2 - 17	38.3 - 16	49.4 - 15	58.7 - 14	68.0 - 13
20	30.2 - 18	42.5 - 17	54.8 - 16	65.1 - 15	75.4 - 14
21	33.4 - 19	47.1 - 18	60.8 - 17	72.2 - 16	83.7 - 15
22	36.7 - 20	51.7 - 18	66.7 - 17	79.4 - 17	92.0 - 16
23	40.2 - 20	56.7 - 19	73.2 - 18	87.2 - 17	101.2 - 17
24	43.8 - 21	61.8 - 20	79.7 - 19	95.1 - 18	110.5 - 17
25	47.4 - 22	66.9 - 21	86.4 - 20	103.1 - 19	119.8 - 18
26	51.1 - 23	72.1 - 22	93.1 - 21	111.2 - 20	129.2 - 19
27	55.2 - 24	78.0 - 23	100.8 - 22	120.4 - 21	140.1 - 20
28	59.4 - 25	83.9 - 24	108.4 - 22	129.7 - 21	151.0 - 20
29	63.9 - 26	90.2 - 24	116.6 - 23	139.6 - 22	162.6 - 21
30	68.4 - 27	96.6 - 25	124.8 - 24	149.4 - 23	174.1 - 22
31	73.2 - 28	103.4 - 26	133.6 - 25	160.2 - 24	186.8 - 23
32	78.0 - 28	110.2 - 27	142.5 - 26	171.0 - 25	199.4 - 24
33	83.4 - 29	117.8 - 28	152.2 - 27	182.6 - 26	213.0 - 25
34	88.8 - 30	125.4 - 29	161.9 - 27	194.2 - 26	226.6 - 25
35	94.0 - 31	132.7 - 30	171.4 - 28	205.8 - 27	240.2 - 26
36	99.1 - 32	140.0 - 31	181.0 - 29	217.4 - 28	253.8 - 27
37	104.8 - 33	148.2 - 31	191.6 - 30	230.4 - 29	269.2 - 28
38	110.6 - 34	156.4 - 32	202.1 - 31	243.4 - 30	284.6 - 29
39	117.0 - 35	165.4 - 33	213.8 - 32	257.3 - 31	300.8 - 30
40	123.4 - 36	174.4 - 34	225.4 - 33	271.2 - 32	316.9 - 31

Table 26.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	3.9	4.3	4.7	5.1	5.5	5.8	6.2
6	5.3	5.8	6.3	6.8	7.3	7.8	8.3
7	7.0	7.6	8.3	8.9	9.5	10.2	10.8
8	8.8	9.6	10.4	11.2	12.0	12.7	13.5
9	11.0	11.9	12.9	13.8	14.8	15.7	16.7
10	13.1	14.2	15.3	16.4	17.5	18.6	19.7

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12	28.8 - 7"	31.4 - 6"				
13	34.4 - 8	37.6 - 7				
14	40.0 - 9	43.8 - 8				
15	46.3 - 9	50.8 - 9				
16	52.6 - 10	57.8 - 9				
17	60.0 - 11	66.0 - 10				
18	67.4 - 12	74.2 - 11				
19	75.7 - 12	83.4 - 11				
20	84.0 - 13	92.6 - 12	99.9 - 11"	107.2 - 10"		
21	93.4 - 14	103.0 - 13	111.4 - 12	119.7 - 11		
22	102.8 - 15	113.5 - 14	122.8 - 13	132.2 - 12		
23	112.9 - 15	124.6 - 14	135.2 - 13	145.9 - 12		
24	123.0 - 16	135.6 - 15	147.6 - 14	159.6 - 13		
25	133.7 - 17	147.6 - 16	160.7 - 15	173.8 - 14		
26	144.4 - 18	159.6 - 17	173.8 - 15	188.0 - 14		
27	156.5 - 19	172.9 - 17	188.5 - 16	204.1 - 15		
28	168.6 - 19	186.2 - 18	203.2 - 17	220.2 - 16	235.8 - 14"	251.4 - 13"
29	181.6 - 20	200.5 - 19	219.2 - 18	237.8 - 17	255.3 - 15	272.8 - 14
30	194.4 - 21	214.8 - 19	235.0 - 18	255.3 - 17	274.7 - 16	294.1 - 15
31	208.9 - 22	231.0 - 20	252.4 - 19	273.8 - 18	295.0 - 17	316.2 - 15
32	223.4 - 22	247.3 - 21	269.8 - 20	292.4 - 19	315.4 - 17	338.4 - 16
33	238.6 - 23	264.2 - 22	288.4 - 21	312.6 - 19	337.6 - 18	362.6 - 17
34	253.9 - 24	281.2 - 23	307.0 - 21	332.9 - 20	359.8 - 19	386.8 - 18
35	269.2 - 25	298.3 - 23	325.8 - 22	353.4 - 21	381.6 - 20	409.8 - 18
36	284.6 - 26	315.4 - 24	344.7 - 23	374.0 - 22	403.4 - 20	432.7 - 19
37	301.8 - 26	334.4 - 25	366.0 - 24	397.5 - 22	428.6 - 21	459.6 - 20
38	319.0 - 27	353.4 - 26	387.2 - 25	421.0 - 23	453.8 - 22	486.5 - 20
39	337.5 - 28	374.2 - 27	409.4 - 25	444.6 - 24	479.4 - 22	514.2 - 21
40	355.9 - 29	394.9 - 28	431.5 - 26	468.1 - 25	505.0 - 23	541.8 - 22

Table 27.--Gross volume (cubic feet, inside bark)
Form Class 90 Trees

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem					
	12	16	20	24	28	32
5	1.6	2.1	2.5	2.9	3.3	3.7
6	2.3	2.9	3.4	3.9	4.5	5.0
7	3.0	3.9	4.6	5.2	5.9	6.5
8	3.9	5.0	5.8	6.6	7.4	8.2
9	4.8	6.3	7.3	9.2	9.2	10.1
10	5.9	7.7	8.8	10.0	11.1	12.2

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs				
	1	1½	2	2½	3
10	7.7 - 9"	10.8 - 8"	13.8 - 8"	16.0 - 7"	18.3 - 6"
11	9.3 - 10	13.0 - 9	16.8 - 8	19.6 - 8	22.5 - 7
12	10.9 - 11	15.3 - 10	19.7 - 9	23.2 - 9	26.7 - 8
13	13.0 - 12	18.2 - 11	23.4 - 10	27.6 - 9	31.8 - 9
14	15.0 - 13	21.0 - 12	27.1 - 11	32.0 - 10	36.9 - 10
15	17.2 - 13	24.2 - 13	31.2 - 12	36.9 - 11	42.6 - 10
16	19.4 - 14	27.4 - 13	35.3 - 12	41.8 - 12	48.4 - 11
17	22.0 - 15	31.0 - 14	40.0 - 13	47.6 - 13	55.1 - 12
18	24.6 - 16	34.7 - 15	44.8 - 14	53.3 - 13	61.8 - 13
19	27.6 - 17	38.9 - 16	50.2 - 15	59.8 - 14	69.4 - 14
20	30.5 - 18	43.1 - 17	55.7 - 16	66.3 - 15	76.9 - 14
21	34.0 - 19	47.9 - 18	61.8 - 17	73.6 - 16	85.4 - 15
22	37.4 - 20	52.7 - 19	68.0 - 18	81.0 - 17	93.9 - 16
23	41.0 - 21	57.8 - 20	74.6 - 18	89.0 - 18	103.3 - 17
24	44.6 - 22	62.9 - 20	81.2 - 19	97.0 - 18	112.7 - 18
25	48.5 - 22	68.4 - 21	88.4 - 20	105.6 - 19	122.7 - 18
26	52.4 - 23	74.0 - 22	95.5 - 21	114.1 - 20	132.7 - 19
27	56.6 - 24	79.9 - 23	103.2 - 22	123.5 - 21	143.8 - 20
28	60.8 - 25	85.9 - 24	111.0 - 23	132.9 - 22	154.8 - 21
29	65.4 - 26	92.4 - 25	119.4 - 24	142.9 - 23	166.4 - 22
30	69.9 - 27	98.8 - 26	127.7 - 24	152.9 - 23	178.1 - 22
31	74.8 - 28	105.7 - 26	136.6 - 25	163.8 - 24	191.0 - 23
32	79.6 - 29	112.6 - 27	145.5 - 26	174.6 - 25	203.8 - 24
33	84.8 - 30	119.9 - 28	155.0 - 27	186.1 - 26	217.2 - 25
34	89.9 - 31	127.2 - 29	164.5 - 28	197.6 - 27	230.7 - 26
35	95.4 - 31	135.0 - 30	174.7 - 29	210.0 - 28	245.2 - 27
36	100.9 - 32	142.9 - 31	184.9 - 30	222.4 - 29	259.8 - 27
37	107.0 - 33	151.4 - 32	195.9 - 30	235.8 - 29	275.6 - 28
38	113.1 - 34	160.0 - 33	206.9 - 31	249.2 - 30	291.5 - 29
39	119.6 - 35	169.1 - 34	218.6 - 32	263.2 - 31	307.8 - 30
40	126.0 - 36	178.2 - 34	230.4 - 33	277.3 - 32	324.2 - 31

Table 29.--Gross volume (cubic feet, inside bark) in merchantable tops of sawlog-size southern pines

Scaling diameter top sawlog (inches)	Gross volume (cubic feet, inside bark) by length of merchantable top section in feet						Scaling diameter top sawlog (inches)					
	4	8	12	16	20	24		28	32	36	40	44
	Trees of high top form index											
5	0.4	0.8	1.2	1.5	1.9	2.3	5	2.7	3.1	3.5	3.8	4.2
6	0.6	1.1	1.7	2.3	2.8	3.4	6	4.0	4.5	5.1	5.7	6.2
7	0.8	1.6	2.4	3.1	3.9	4.7	7	5.5	6.3	7.1	7.9	8.6
8	1.0	2.0	3.0	4.0	5.0	6.1	8	7.1	8.1	9.1	10.1	11.1
9	1.3	2.5	3.8	5.0	6.3	7.6	9	8.8	10.1	11.5	12.6	13.9
10	1.6	3.2	4.7	6.3	7.9	9.5	10	11.0	12.6	14.2	15.8	17.3
11	1.9	3.9	5.8	7.7	9.6	11.6	11	13.5	15.4	17.3	19.3	21.8
12	2.3	4.5	6.8	9.1	11.4	13.6	12	15.9	18.2	20.4	22.7	25.0
13	2.6	5.3	7.9	10.6	13.2	15.8	13	18.5	21.1	23.8	26.4	29.0
14	3.1	6.2	9.3	12.4	15.4	18.5	14	21.6	24.7	27.8	30.9	34.0
15	3.6	7.1	10.7	14.3	17.9	21.4	15	25.0	28.6	32.2	35.7	39.3
16	4.0	8.1	12.1	16.1	20.2	24.2	16	28.2	32.3	36.3	40.4	44.4
17	4.5	9.0	13.6	18.1	22.6	27.1	17	31.7	36.2	40.7	45.2	49.8
18	5.1	10.2	15.3	20.4	25.5	30.6	18	35.8	40.9	46.0	51.1	56.2
19	5.7	11.5	17.2	22.9	28.6	34.4	19	40.1	45.8	51.5	57.3	63.0
20	6.3	12.6	18.9	25.2	31.5	37.8	20	44.1	50.4	56.7	63.1	69.4
	Trees of average top form index											
5	0.3	0.6	0.9	1.3	1.6	1.9	5	2.2	2.5	2.8	3.2	3.5
6	0.4	0.9	1.3	1.8	2.2	2.6	6	3.1	3.5	4.0	4.4	4.9
7	0.6	1.2	1.8	2.5	3.1	3.7	7	4.3	4.9	5.5	6.1	6.7
8	0.8	1.6	2.4	3.1	3.9	4.7	8	5.5	6.3	7.1	7.9	8.6
9	1.0	2.0	3.0	4.0	5.0	6.1	9	7.1	8.1	9.1	10.1	11.1
10	1.2	2.5	3.7	4.9	6.1	7.4	10	8.6	9.8	11.0	12.5	13.5
11	1.5	3.0	4.5	6.0	7.5	9.0	11	10.5	12.0	13.5	15.0	16.5
12	1.8	3.5	5.3	7.1	8.8	10.6	12	12.4	14.1	15.9	17.7	19.4
13	2.1	4.2	6.3	8.4	10.5	12.6	13	14.7	16.8	18.9	21.0	23.0
14	2.4	4.8	7.2	9.6	12.0	14.4	14	16.8	19.2	21.6	24.1	26.5
15	2.8	5.6	8.4	11.1	13.9	16.7	15	19.5	22.3	25.1	27.9	30.6
16	3.1	6.3	9.4	12.6	15.7	18.8	16	22.0	25.1	28.3	31.4	34.6
17	3.6	7.1	10.7	14.3	17.9	21.4	17	25.0	28.6	32.2	35.7	39.3
18	4.0	8.0	11.9	15.9	19.9	23.9	18	27.8	31.8	35.8	39.8	43.7
19	4.5	8.9	13.4	17.8	22.3	26.8	19	31.2	35.7	40.2	44.6	49.1
20	4.9	9.8	14.7	19.6	24.5	29.5	20	34.4	39.3	44.2	49.1	54.0
	Trees of low top form index											
5	0.3	0.5	0.8	1.0	1.3	1.5	5	1.8	2.0	2.3	2.5	2.8
6	0.3	0.7	1.0	1.4	1.7	2.1	6	2.4	2.8	3.1	3.5	3.8
7	0.5	1.0	1.4	1.9	2.4	2.9	7	3.4	3.8	4.3	4.8	5.3
8	0.6	1.3	1.9	2.5	3.2	3.8	8	4.5	5.1	5.7	6.4	7.0
9	0.8	1.6	2.4	3.1	3.9	4.7	9	5.5	6.3	7.1	7.8	8.6
10	1.0	2.0	2.9	3.9	4.9	5.9	10	6.9	7.8	8.8	9.8	10.8
11	1.2	2.4	3.6	4.8	6.0	7.2	11	8.4	9.6	10.8	12.0	13.2
12	1.4	2.8	4.2	5.6	7.0	8.4	12	9.8	11.2	12.6	14.0	15.4
13	1.7	3.3	5.0	6.6	8.3	9.9	13	11.6	13.2	14.9	16.5	18.2
14	1.9	3.9	5.8	7.7	9.6	11.6	14	13.5	15.4	17.4	19.3	21.2
15	2.2	4.4	6.5	8.7	10.9	13.1	15	15.3	17.4	19.6	21.8	24.0
16	2.5	5.0	7.5	10.0	12.5	15.0	16	17.5	20.0	22.5	25.0	27.5
17	2.8	5.7	8.5	11.3	14.2	17.0	17	19.9	22.7	25.5	28.4	31.2
18	3.2	6.4	9.6	12.8	16.0	19.2	18	22.4	25.6	28.8	32.0	35.2
19	3.5	7.0	10.6	14.1	17.6	21.1	19	24.6	28.2	31.7	35.2	38.7
20	3.9	7.8	11.7	15.7	19.6	23.5	20	27.4	31.3	35.2	39.2	43.1

Table 27.--Continued

Tree diameter (inches)	Cordwood volume (cubic feet, inside bark) by length (feet) of merchantable stem						
	36	40	44	48	52	56	60
5	4.1	4.5	4.9	5.3	5.7	6.1	6.5
6	5.5	6.0	6.6	7.1	7.6	8.1	8.7
7	7.2	7.9	8.5	9.2	9.8	10.5	11.2
8	9.1	9.9	10.7	11.5	12.3	13.1	13.9
9	11.1	12.0	13.0	13.9	14.9	15.8	16.8
10	13.4	14.5	15.6	16.8	17.9	19.0	20.2

Tree diameter (inches)	Sawlog volume (cubic feet, inside bark) and scaling diameter (inches) of top sawlog, by number of 16-foot logs					
	3½	4	4½	5	5½	6
10						
11						
12	29.4 - 7"	32.0 - 6"				
13	35.0 - 8	38.3 - 7				
14	40.8 - 9	44.6 - 8				
15	47.3 - 10	52.0 - 9				
16	53.8 - 10	59.3 - 9				
17	61.4 - 11	67.6 - 10				
18	68.8 - 12	75.9 - 11				
19	77.3 - 13	85.2 - 12				
20	85.7 - 13	94.5 - 12	102.0 - 11"	109.5 - 10"		
21	95.3 - 14	105.2 - 13	113.8 - 12	122.4 - 11		
22	105.0 - 15	116.0 - 14	125.6 - 13	135.2 - 12		
23	115.2 - 16	127.2 - 15	138.1 - 14	149.0 - 12		
24	125.6 - 16	138.4 - 15	150.6 - 14	162.9 - 13		
25	137.0 - 17	151.2 - 16	164.7 - 15	178.2 - 14		
26	148.4 - 18	164.1 - 17	178.8 - 16	193.4 - 15		
27	160.7 - 19	177.6 - 18	193.6 - 16	209.7 - 15		
28	173.0 - 20	191.1 - 18	208.6 - 17	226.0 - 16	242.1 - 15"	258.2 - 13"
29	186.0 - 20	205.6 - 19	224.7 - 18	243.8 - 17	261.8 - 15	279.8 - 14
30	199.0 - 21	220.0 - 20	240.8 - 19	261.6 - 18	281.6 - 16	301.5 - 15
31	213.7 - 22	236.4 - 21	258.4 - 19	280.4 - 18	302.2 - 17	323.9 - 16
32	228.4 - 23	252.9 - 21	276.0 - 20	299.2 - 19	322.8 - 18	346.3 - 16
33	243.5 - 24	269.8 - 22	294.6 - 21	319.4 - 20	345.0 - 18	370.5 - 17
34	258.6 - 24	286.6 - 23	313.0 - 22	339.5 - 20	367.1 - 19	394.7 - 18
35	275.0 - 25	304.9 - 24	333.2 - 22	361.6 - 21	390.5 - 20	419.4 - 19
36	291.5 - 26	323.2 - 25	353.4 - 23	383.7 - 22	413.9 - 21	444.1 - 19
37	309.2 - 27	342.8 - 25	375.3 - 24	407.8 - 23	439.7 - 21	471.6 - 20
38	326.9 - 28	362.3 - 26	397.0 - 25	431.8 - 24	465.5 - 22	499.2 - 21
39	345.6 - 29	383.3 - 27	419.4 - 26	455.6 - 24	491.4 - 23	527.2 - 21
40	364.2 - 29	404.3 - 28	441.9 - 27	479.5 - 25	517.4 - 24	555.2 - 22

Table 28 —Area of circles in square feet (basal area table)[1/]

Diameter Inches	Diameter—tenths of inches										Diameter Inches
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
	Area—square feet										
						0.001	0.002	0.003	0.003	0.004	
1	0.005	0.007	0.008	0.009	0.011	.012	.014	.016	.018	.020	1
2	.022	.024	.026	.029	.031	.034	.037	.040	.043	.046	2
3	.049	.052	.056	.059	.063	.067	.071	.075	.079	.083	3
4	.087	.092	.096	.101	.106	.110	.115	.120	.126	.131	4
5	.136	.142	.147	.153	.159	.165	.171	.177	.183	.190	5
6	.196	.203	.210	.216	.223	.230	.238	.245	.252	.260	6
7	.267	.275	.283	.291	.299	.307	.315	.323	.332	.340	7
8	.349	.358	.367	.376	.385	.394	.403	.413	.422	.432	8
9	.442	.452	.462	.472	.482	.492	.503	.513	.524	.535	9
10	.545	.556	.567	.579	.590	.601	.613	.624	.636	.648	10
11	.660	.672	.684	.696	.709	.721	.734	.747	.759	.772	11
12	.785	.799	.812	.825	.839	.852	.866	.880	.894	.908	12
13	.922	.936	.950	.965	.979	.994	1.009	1.024	1.039	1.054	13
14	1.069	1.084	1.100	1.115	1.131	1.147	1.163	1.179	1.195	1.211	14
15	1.227	1.244	1.260	1.277	1.294	1.310	1.327	1.344	1.362	1.379	15
16	1.396	1.414	1.431	1.449	1.467	1.485	1.503	1.521	1.539	1.558	16

17	1.576	1.595	1.614	1.632	1.651	1.670	1.689	1.709	1.728	1.748	17
18	1.767	1.787	1.807	1.827	1.847	1.867	1.887	1.907	1.928	1.948	18
19	1.969	1.990	2.011	2.032	2.053	2.074	2.095	2.117	2.138	2.160	19
20	2.182	2.204	2.226	2.248	2.270	2.292	2.315	2.337	2.360	2.382	20
21	2.405	2.428	2.451	2.474	2.498	2.521	2.545	2.568	2.592	2.616	21
22	2.640	2.664	2.688	2.712	2.737	2.761	2.786	2.810	2.835	2.860	22
23	2.885	2.910	2.936	2.961	2.986	3.012	3.038	3.064	3.089	3.115	23
24	3.142	3.168	3.194	3.221	3.247	3.274	3.301	3.328	3.355	3.382	24

Diameter	Area	Diameter	Area	Diameter	Area	Diameter	Area	Diameter	Area
Inches	Sq. ft.	Inches	Sq. ft.	Inches	Sq. ft.	Inches	Sq. ft.	Inches	Sq. ft.
25	3.409	32	5.585	39	8.296	46	11.541	53	15.321
26	3.687	33	5.940	40	8.727	47	12.048	54	15.904
27	3.976	34	6.305	41	9.168	48	12.566	55	16.499
28	4.276	35	6.681	42	9.621	49	13.095	56	17.104
29	4.587	36	7.069	43	10.085	50	13.635	57	17.721
30	4.909	37	7.467	44	10.559	51	14.186	58	18.348
31	5.241	38	7.876	45	11.045	52	14.748	59	18.986

1/ Revised and checked by Southern Forest Experiment Station with Basal Area Table, "Forest Mensuration," by H. H. Chapman.

APPENDIX

Converting Cubic Volume Inside Bark to Rough Cords

The preceding tables for cubic-foot volume inside bark are designed for making precise estimates of volume of usable wood, exclusive of bark. When cord measure including bark is desired, the timber manager should use tables based on measurements outside bark. Such tables allow cubic-foot volume of wood and bark together to be computed directly without reference to bark thickness. Examples of such tables are the Southern Forest Experiment Station's form point cubic-foot volume tables, including bark,1/ for second-growth southern pine.

Cubic-foot volume i.b., as obtained from the tables presented in this paper, may be converted approximately to stacked cords of wood and bark by the factors given below. Since these factors were compiled for broad zones in the South, they should be carefully checked before being applied in any given area; local peculiarities may otherwise cause large errors.

1/ U. S. Forest Service. Volume tables, converting factors, and other information applicable to commercial timber in the South. Ed. 4, pp. 5-6. Atlanta, Ga. 1942. (Processed.)

Locality	To get rough cords, divide i.b. volume in cu. ft. by:	
	For pine	For hdwds.
Alabama		
Naval stores region	74.9	65.1
Remainder of State	75.9	65.4
Arkansas		
Delta region	73.4	66.7
Southern pine-hardwood region	76.7	65.6
Northwest pine-hardwood region	(1/)	(1/)
Florida	74.1	67.0
Georgia		
Northern pine-hardwood region	76.1	65.5
Naval stores region	74.2	65.5
Louisiana		
Delta region	74.1	67.5
Western pine-hardwood region	76.3	66.3
Naval stores region	75.3	66.0
Mississippi		
Delta region	...	69.9
Central pine-hardwood region	75.5	65.6
Naval stores region	75.1	65.0
Oklahoma	78.0	64.9
Texas	76.3	65.5

1/ No figures available.

A slightly more accurate approximation can be made by obtaining representative local samples of $\frac{\text{o.b.volume}}{\text{i.b.volume}}$ ratio for each d.b.h. class and species, and then multiplying the cubic-foot i.b. volume in each d.b.h. class and species by the corresponding ratio. The ratio is most easily computed as:

$$\frac{\text{Butt d.o.b.}^2 + 2[\text{mid d.o.b.}^2] + \text{top d.o.b.}^2}{\text{Butt d.i.b.}^2 + 2[\text{mid d.i.b.}^2] + \text{top d.i.b.}^2}.$$

This method allows for bark fluctuation due to species, height, and d.b.h., but it involves sampling felled trees and measuring in inches the diameter (both inside and outside bark) at stump, at cut nearest mid-point of merchantable bole, and at merchantable top.

To make the computations, square each of the above measurements, then weight the squared mid-point values by doubling them. Sum the squared o.b. measurements (with mid-point values weighted as above) for all samples within a species-d.b.h. class, and divide by the sum of the corresponding squared i.b. measurements (with mid-point values weighted as above). The resulting quotient is the proper factor, within a species-d.b.h. class, by which to multiply cubic-foot volume of wood inside bark in order to convert to cubic-foot volume of wood, including bark.

To convert cubic volume outside bark to cords, divide by 90 for pine and by 80 for hardwood. Diameter, length, straightness, and knottiness of stick all influence the number of cubic feet in a cord. If it is desirable to allow for these variations in $\frac{\text{cord}}{\text{o.b. volume}}$ ratio, consult the factors for each average stick condition given in the Lake States Forest Experiment Station Forest Research Digest for May 1935, page 5.